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**International
Marketing Information
Series**



CN

Commercial News USA

New Products and Trade Information

July/August 1978

**Special Issue: Energy
Conservation Highlights
and 106 New Energy-
Efficient Products**



U.S. DEPARTMENT OF COMMERCE
Industry and Trade Administration
Washington, D.C. 20230

TO THE FOREIGN SERVICE POSTS:

On the occasion of this second special Energy Issue of the Commercial News USA, Commerce joins with the Department of Energy in commending the Commercial and Public Affairs Officers for their outstanding support of the first Energy Issue published last year.

The first issue was a success primarily as a result of your enthusiastic efforts on its behalf. You may be interested to know that of the 88 new product firms listed in the first issue, 57 have reported combined export sales of more than \$544,500 as a result of some 2,600 overseas inquiries, all bearing the commercial newsletter "Dept. CN" code. Even more impressive is the fact that these same firms anticipate over \$5 million in additional sales during the next 12 months.

Yet, this is only the tip of the iceberg. Success in international marketing, as you know, depends on more than direct sales, whether immediate or anticipated, which result from initial market exposure. In fact, these sales may seem almost insignificant when compared with the accumulative export dollars ultimately achieved by U.S. firms which establish active overseas representatives.

Latest reports indicate that the firms included in the first Energy Issue have already signed 14 agents and are currently negotiating another 111 such relationships, as a direct result of that issue.

Since a number of firms have not yet reported their results, it seems likely that the total number of export actions generated by the 1977 Energy Issue will be even higher than indicated by the figures cited above.

Because of the success of the last Energy Issue, we have been able to prepare this second issue, which is even more extensive, and we hope, with your support, will be even more successful than the last issue.

Congratulations on a job well done.

EDITOR

This special energy issue of Commercial News USA was produced in cooperation with the U.S. Department of Energy, Office of the Assistant Secretary for Conservation and Solar Applications.

FOREWORD

The purpose of the *COMMERCIAL NEWS USA* magazine is to provide pertinent U.S. commercial information for reprinting in some 85 Posts' Commercial Newsletters which are disseminated to over 100,000 foreign business officials, government representatives and other prospective buyers. This magazine is specifically designed to foster and promote U.S. commercial interests in foreign markets. In addition, it informs the U.S. Foreign Service of new Commerce trade promotion program and policy developments.

The worldwide Commercial Newsletter program plays an important role in expanding U.S. exports all over the world by publicizing information concerning new American products and technological developments and U.S. commercial exhibitions at home and abroad. Significant sales of "New Products U.S.A." further the objective of establishing the image of the United States as a first source of quality equipment and advanced technology. In addition, Commercial Newsletters promote U.S. investment and licensing abroad.

The material in "Commercial News USA" may be reproduced freely in foreign countries without specific permission. We urge both USIS Public Affairs Officers and Post Commercial Officers to widely publicize the new product information abroad through Commercial journals, newspapers, etc. Posts should also retain copies in overseas Commercial Libraries for reference purposes since this magazine is not regularly available to U.S. or foreign companies on a subscription or gratis basis.

This information was compiled in cooperation with various government and industry officials. Every effort has been made to ensure that the data contained in this publication is correct. However, no responsibility can be assumed by the U.S. Government for the accuracy of dates or the outcome of any transaction with any person or firm mentioned herein.

Suggestions or comments regarding this publication are welcomed.

WRITE: *Commercial News USA*, Office of International Marketing, Bureau of Export Development, Industry and Trade Administration U.S. Department of Commerce, Washington, D.C. 20230; Telephone (AC) 202/377-5783.

EDITOR: CONSTANCE L. WHITE



UNITED STATES DEPARTMENT OF COMMERCE
Industry and Trade Administration
Washington, D.C. 20230

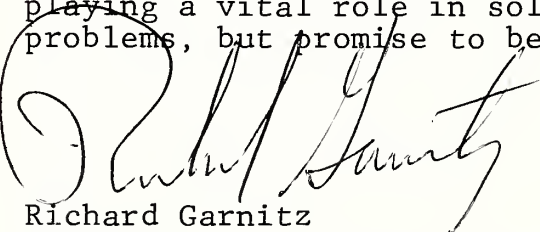
ENERGY: GROWING MARKET FOR THE FUTURE

American industry developed its know-how during an era of cheap and abundant fuel. The conventional wisdom held that energy supplies were inexhaustible and did not need to be conserved. As higher fuel costs and diminished availability have made their impact, more efficient products and processes have been developed by U.S. industry.

This issue of the Commercial News USA presents a wide variety of new energy-efficient American products which grew out of a need to conserve energy. By bringing this information to the attention of industries around the world, America is not only meeting a growing market demand but is offering a positive approach to extending the world's dwindling energy resources.

We have been pleased to work with the Department of Energy in developing this issue. Also, we are grateful to the various U.S. trade associations and the Commerce District Offices for their help in identifying U.S. manufacturers of new energy-related products. But we particularly need the support of the U.S. Commercial and Public Affairs Officers in widely publicizing this information abroad.

U.S. technologies and industrial advances are not only playing a vital role in solving the world's current energy problems, but promise to be crucial in the years to come.



Richard Garnitz
Director
Office of International Marketing



Department of Energy
Washington, D.C. 20545

ENERGY CONSERVATION - AN INTERNATIONAL CHALLENGE

The Office of Business Assistance Programs (OBAP) of the Department of Energy is pleased to have had the opportunity to work with the Department of Commerce to assist in the publication of this "Special Energy Edition" of the Commercial News USA.

As part of the Conservation and Solar Applications area of the Department of Energy, OBAP regularly maintains close contact with the American business community. Through programs such as our Voluntary Business Energy Conservation Program, which records and reports business's progress on energy conservation, we are kept abreast of many of the advances that American industry and business have made in conserving energy.

This publication, made available through the support of the Foreign Service of the Department of State, provides a unique opportunity to introduce readers to some of the innovative U.S. products and techniques that have been developed.

Energy conservation is an international challenge. Like its predecessor published in March 1977, we are confident that this publication will serve to promote the exchange of ideas and solutions to conservation problems which face all nations.

A handwritten signature in black ink, appearing to read "E. Simmons", is written over a horizontal line.

Edward S. Simmons
Director
Office of Business Assistance
Programs
Office of the Assistant Secretary
Conservation and Solar Applications

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THE ENERGY SCENE: 1978

The United States is placing heavy emphasis on solar research and development and already has many commercially available products and devices that could help cut energy costs in many other countries.

These products would be particularly valuable in countries which have historically been faced with very high energy costs.

The United States is planning even further expansion of solar research and development as indicated by President Carter in a recent speech. The President said: "I have just instructed the Department of Energy, through reprogramming, to provide an additional \$100 million for expanded efforts in solar research development and demonstration projects and development of commercial uses such as windmills in the next fiscal year."

The President also indicated that \$100 million would be spent over a three-year period to install solar equipment in Federal buildings, including a solar hot water heating system in the White House. The Department of Energy also plans to install both active and passive solar systems in the Department's new main headquarters, the Forrestal Building in Washington, D.C.

By making large purchases of solar equipment, the Federal Government intends to help stimulate the solar energy industry. It is hoped that this will not only provide a Government market for solar equipment, but also encourage a private market.

Among solar programs to be expanded is one involving Photovoltaics (solar-electric) which involve cells that convert sunlight directly to electricity. The Department of Energy will expand the current focus on flat plate silicon cell technology to include new technologies such as those utilizing amorphous materials, photochemical conversion and advanced concentrator concepts.

Photovoltaic cells have a wide range of potential applications, since electricity can be used to meet all types of energy demands. In addition, photovoltaics can be used either for dispersed or central power generation. However, costs must be substantially reduced so that photovoltaics may be made more competitive with conventional power sources for residential applications.

Another new initiative involves encouragement of passive solar heating and cooling through national and regional competitions and financial awards to architects and builders. Competitions would be structured to include members of the architectural and building communities as well as local government authorities.

Passive solar buildings capture solar heat with devices such as greenhouses or south-facing windows with overhangs, and store the heat in masonry walls or floors, rocks, or roof ponds. These devices are intended to capture and radiate solar energy into the building for heating or to remove heat from the building for cooling. The potential for energy savings is considerable.

Another new solar outreach is designed to establish training programs for solar equipment installers and maintenance personnel. The solar heating industry has grown from almost nothing five years ago to a level of annual sales exceeding \$200 million. However, the growth of the solar industry could be constrained over the long term by a lack of skilled installation and maintenance personnel. The projected training programs are designed to prevent this problem. They would be operated by labor unions, community colleges, trade associations and other qualified groups.

These solar programs are part of a group of supply initiatives designed to improve the Nation's capability to commercialize new energy supply technologies. These initiatives will be funded from offsetting adjustments within the Department of Energy's budget and will build upon the National Energy Plan to ensure a balanced supply picture beyond the mid-1980's.

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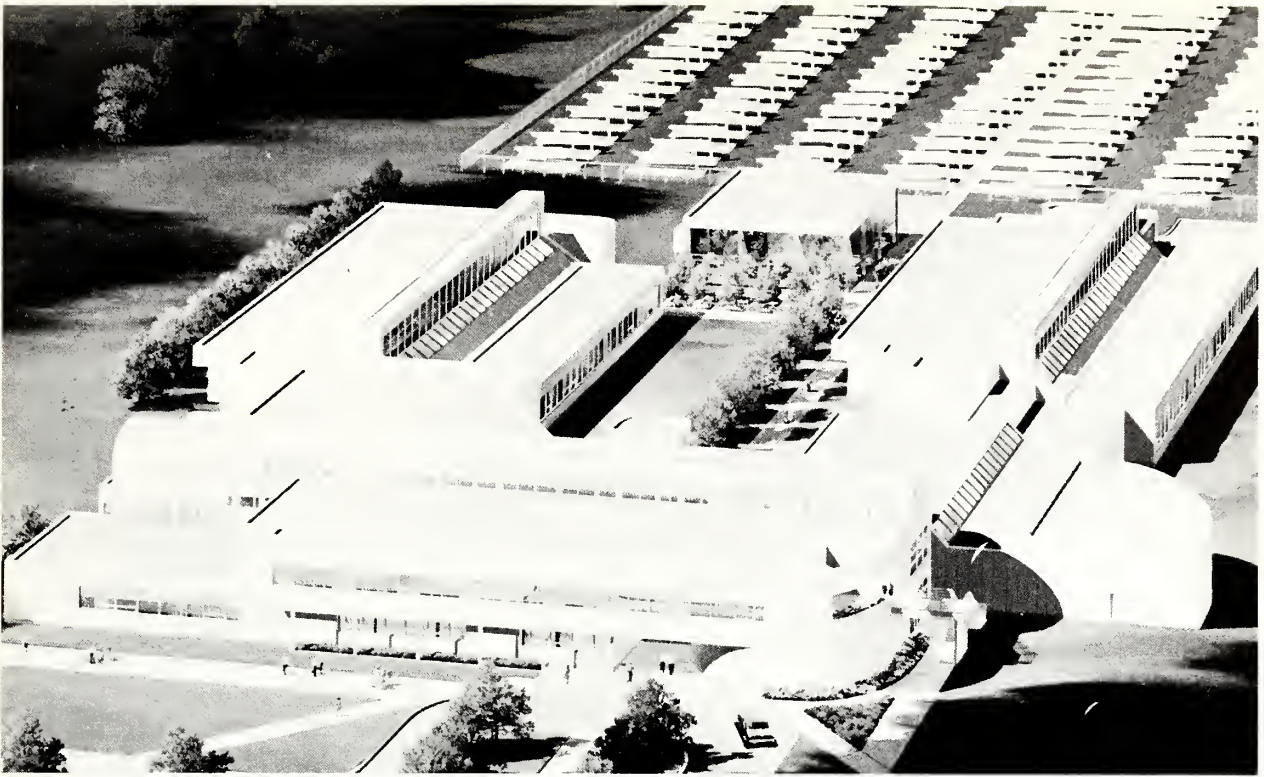
SEA ENERGY BUOY OPERATING IN GULF -- A 100-ton buoy, named OTEC-2, has begun collecting data in the Gulf of Mexico to provide important information on the mechanics of extracting energy from the sea. The 40-foot diameter discus buoy, a product of the Commerce Department's National Oceanic and Atmospheric Administration (NOAA), has been equipped to test the effect of seawater on Ocean Thermal Energy Conversion (OTEC) power plants. Such plants, currently in the experimental stage, generate electricity by using the temperature differential between the warm surface layers of the ocean and the colder waters below.

This huge, unmanned buoy is moored approximately 180 miles west of Tampa, Florida. It will remain on station for three to six month periods measuring the effects of biological fouling, corrosion, and scaling on heat transfer surfaces of the heat exchangers to be used in OTEC power plants.

It is equipped with a hydraulic flow system, which pumps seawater from a depth of 75 feet through tubes of aluminum and titanium into the heat transfer monitor assemblies.

The data collected by OTEC-2, in conjunction with data from similar experiments previously conducted at Hawaii and the Virgin Islands, is expected to provide information vital to the development of large power plants capable of extracting the limitless solar energy stored in the oceans of the world.

* * * *



PHOTOVOLTAIC/THERMAL POWER FOR A COMMUNITY COLLEGE: THE BLYTHEVILLE PROJECT.

One of the United States' most interesting and potentially far-reaching energy projects is well under way at Blytheville, Arkansas, where the new Mississippi County Community College is scheduled to open its doors to students in the Fall of 1979. This totally new facility, with a typical daily energy requirement of 240 kilowatts in summer, will draw its energy from an actively cooled solar photovoltaic power source. In addition, a number of unique energy-efficient materials and design features are included in the structure and a minicomputer management system will ensure efficient use of power.

One of the project's most significant developments has been the overall reduction of cell cost per watt by a factor of five. This and other features indicate that the project as a whole will constitute a major milestone in the utilization of energy from renewable sources. TEAM, Inc. of Springfield, Virginia, is responsible for system design and integration, as well as technical management. The Solarex Corporation of Rockville, Maryland provided the basic solar power system.

* *

INTERNATIONAL TECHNOLOGY SHARING

The Office of Business Assistance Programs (OBAP) of the Department of Energy has implemented a program which is designed to provide U.S. businessmen with valuable energy conservation information gathered from around the world, particularly from the industrialized nations. Many of these nations have historically paid higher prices for energy than the United States and as a result have developed products and processes which in some cases are more energy-efficient than their American counterparts.

Rising energy costs in the United States make it imperative for U.S. industry to undertake energy conservation programs, develop new methods and adopt existing, readily available and proven equipment and techniques from foreign countries. Two approaches will be used to provide the necessary information to the American business community.

The first approach will entail a general search, in eight selected countries, for all types of energy-efficient products, processes and techniques which may be considered commonplace in Europe or Japan but which are not presently generally known or in use in the United States. An example might be new equipment for heat recovery. This information would then be published, in a format similar to the Commercial News USA, for distribution to the U.S. business community.

The second approach involves looking in detail at specific energy-intensive processes which have applications in several industries. These studies would provide U.S. industrial decision makers with case histories and concise performance, techno/economic information on the processes examined. An example of this type of study is an evaluation of Western European evaporation technology which is now being prepared for the Department of Energy.

* * * *

A SELECTED LIST OF U.S. ASSOCIATIONS OF MANUFACTURERS OF ENERGY-EFFICIENT EQUIPMENT

Alternative Sources of Energy
Box 90A
Milaca, MN 56353

Solar Energy Industries Association
1001 Connecticut Avenue, N. W. Suite 632
Washington, D. C. 20036

American Wind Energy Association
54468 CR 31
Bristol, Indiana 46507

* * * *

U.S. GOVERNMENT SPONSORED EVENTS OVERSEAS

CALENDAR

Further information on the events listed below may be obtained by contacting the nearest U.S. Commerce District Office or write Office of International Marketing, Room 4012, Bureau of Export Development, U.S. Department of Commerce, Washington, D.C. 20230. If overseas, contact the nearest U.S. Embassy. The listed events/dates are subject to change or cancellation without prior notice.

ENERGY RELATED EVENTS

TRADE CENTER EXHIBITIONS

NUCLEX (Nuclear Power Eqpt. and Instru.) (Off-site: Basle, Switzerland)	Milan	Oct. 3-7, 1978
Electrical Energy Sysys.	Singapore	Nov. 6-10, 1978
Electrical Energy Eqpt.	Tehran	Jan. 14-18, 1979
Electrical Energy Control Sysys.	Moscow	Feb. 12-16, 1979
Electrical Energy Sysys.	Taipei	July 11-15, 1979
Energy Sysys.	Sao Paulo	Sept. 17-21, 1979
Industrial Energy Mgmt.	Mexico City	(no date given)

TRADE MISSIONS

Electrical Energy Eqpt.	Egypt/Bahrain/Quatar	December 1979
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SEMINAR MISSIONS

Electrical Power Eqpt.	Indonesia/Malaysia/Thailand	March 1979
Electrical Energy Sysys.	Algeria/Morocco Tunisia	April 1979
Energy Sysys.	Cameroon/Ivory Coast/Gabon/Nigeria	June 1979

CATALOG EXHIBITIONS

Energy Sysys.	Guatemala/Nicaragua/Costa Rica	March 1979
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MAJOR PRODUCT EXHIBITIONS IN THE U.S.

The following listing includes many of the major U.S. conventions and exhibitions covering a wide variety of Energy Related Events. This information is subject to change without prior notice.

CALENDAR

ENERGY RELATED EVENTS

<u>SHOW</u>	<u>LOCATION</u>	<u>DATE</u>
American Chemical Society * A. T. Winstead 1155 16th Street, N. W. Washington, D. C. 20036	Miami Beach, Fla.	Sept. 10-15, 1978
American Apparel Manufacturers Conference * Harry J. Carver, Jr. 1611 N. Kent Street Arlington, Va. 22209	Atlanta, Georgia	Sept. 19-23, 1978
Western Electronic Show and Convention (WESCON) * William C. Weber, Jr. 999 N. Sepulveda Blvd. El Segundo, California 90245	Los Angeles, CA	Sept. 19-23, 1978
Solar Energy Products Exhibit * Frances Angelone 1001 Connecticut Ave., N. W. Washington, D. C. 20036	Boston, Mass.	Oct. 4-8, 1978
Building Construction Expo & Conference * Charles Snitow Organization Inc. 331 Madison Avenue New York, New York 10017	Chicago, Ill.	Oct. 16-19, 1978
Southern Plant Engineering and Maintenance Show * Peter Nathan Clapp & Poliak 245 Park Avenue New York, New York 10017	Houston, Texas	Nov. 14-16, 1978

Consumer Electronics Show

* William Glaszow
1, IBM Plaza
Chicago, Illinois 60611 Chicago, Ill. Jan. 11-14, 1979

International Exposition of
Food Processors

* W. Dewey Clower
1828 L Street, N. W.
Washington, D. C. 20036 San Francisco, CA Jan. 21-24, 1979

Paper Industry International
Management Conference

* George J. Calimafoe
2400 E. Oakton Street
Arlington Heights, Ill. 60005 San Francisco, CA Jun. 13-17, 1979

Iron & Steel Exposition

* Richard Dorrell
Suite 2550
3 Gateway Center
Pittsburgh, Pa. 15222 Chicago, Ill. Sept. 25-27, 1979

* *Contact points for further trade show information*

* * * *

THE AMERICAN WIND ENERGY ASSOCIATION will hold its Eighth National Convention this fall, at the Sheraton-Regal Inn in Hyannis (Cape Cod), Massachusetts, September 25-28, 1978. Highlights will include presentations by many notables in the wind energy field and exhibitions of wind energy hardware. Will feature all types of windmill electric power generation and water pumping equipment. Foreign attendance particularly invited for exchanges in technology. To receive a registration form and more details, WRITE:

Colleen Horning
Convention Coordinator
c/o Environmental Energies, Inc.
P.O. Box 73
Copemish, Michigan 49625

* * * *

WORLDWIDE ADVERTISING FOR NEW U.S. "ENERGY-EFFICIENT" PRODUCTS

The following new "energy-efficient" products have been selected by the Department of Commerce to receive worldwide publicity through the commercial newsletter program. Because of the global interest in energy conservation, Commerce has published this specialized edition of the Commercial News USA a large portion of which features new and improved "energy efficient" products. With this issue, Commercial News USA repeats a theme which proved highly successful in its publication of March/April last year.

For the purposes of this publication, an "energy-efficient" product is defined as any product that minimizes the consumption of energy as compared to the requirements of the normal product or method in use, and/or replaces a scarce fuel with an abundantly available fuel (e.g. oil with coal). Products which tap "renewable" energy sources such as solar power, the wind and tides, geothermal power, etc. are also considered to fall under this heading. Of course, the amount of money saved in energy costs should justify the capital expenditure made in purchasing and installing the energy efficient product.

Commercial News USA is regularly forwarded to 240 U.S. Embassies and Consulates overseas. The new product information is reprinted in 85 post commercial newsletters depending on individual market applicability. Together, these overseas newsletters reach more than 100,000 key industry and foreign government officials.

These same "energy-efficient" products will be publicized weekly by the Voice of America (VOA) radio broadcasts in some 36 languages.

Please note that the following pages list promotional product descriptions along with the name and address of each manufacturer. Each new product has been placed in the category (Energy: Solar; Energy: Electric and other; Automotive; etc.) which seemed most appropriate for it. In many cases, the categories are those specifically indicated by the manufacturers.

Bringing new energy-efficient products to the international business community not only meets a growing market demand but also offers a positive approach to extending the world's dwindling energy resources. PLEASE PUBLISH AS MANY OF THESE NEW "ENERGY-EFFICIENT" PRODUCTS AS POSSIBLE. Your comments regarding this publication are welcomed.

NEW PRODUCTS U.S.A.

The following product information has been selected by the Department of Commerce for promotion through the New Product Information Service (NPIS). This information is also made available by Commerce on a selected basis to VOA for worldwide broadcasting. While the firms mentioned in Commercial News USA are believed to be reliable, no responsibility can be assumed by the U.S. Government or its representatives for the accuracy of the new product descriptions which are based on information supplied by the listed U.S. firms. Both technical and non-technical products are deliberately included to ensure worldwide market applicability. Please reprint as many new product descriptions as possible.

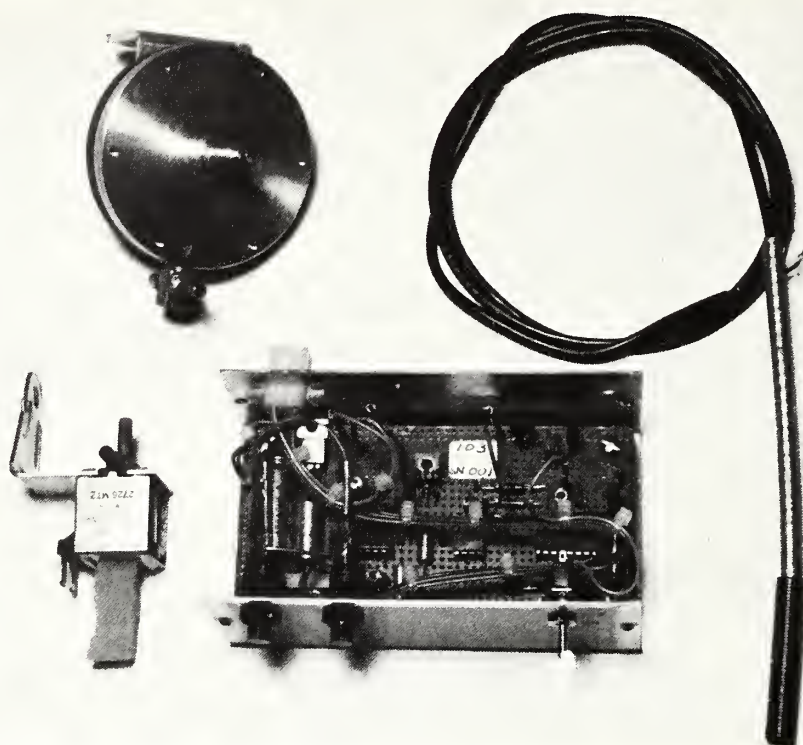
AIR AND WATER PURIFICATION & POLLUTION CONTROL

SYSTEM RECYCLES UP TO 80 PERCENT OF LAUNDRY WASTE WATER -- This manufacturer has undertaken commercial production of a new system for cleaning and recycling waste water from commercial laundries. By a combination of physical and chemical processes, the "Redux System" sufficiently purifies waste water so that 80 percent may be re-used for both washing and rinsing cycles in laundering. Since it is a continuous system, the firm notes, up to 70 percent of the energy used to heat the water may also be saved. In areas where pollution is a problem, removed contaminants can be reduced to a dried form for easy disposal rather than drained through conventional sewer systems. Priced from \$50,000 to \$300,000. Agents are sought. WRITE: H.F. Lyman, The Redux Corporation, Dept. CN, 1173 Reco Drive, St. Louis, Missouri 63126 U.S.A.

ENERGY-SAVING DOSING PUMPS -- Designed for adding small amounts of chemicals to various industrial processes (including those used in paper mills, textile mills, water conditioning plants, etc.), the "A" series dosing pumps are reported to provide dramatic energy savings as high as 50 or 90 percent. Because of a new electronic control system, the pumps draw power only on their discharge strokes. The "A" series offers many features common in this company's larger pumps: safeguards against over-pressure and thermal overload, corrosion-proof housing and liquid ends, etc. The units are available with both stroke length and stroke frequency adjustment for output variation of 50:1 or better during operation. Price range is \$204-\$439. Company is seeking distributors and agents. WRITE: R.L. Jewett, Liquid Metronics Inc., Dept. CN, 3 Jones Road, Waltham, Massachusetts 02154 U.S.A.

AUTOMOTIVE

(Including Diagnostic Servicing and Safety Equipment)



ENGINE MONITOR SYSTEM ASSURES EFFICIENT COMBUSTION -- The "Lean Limit Control System" is based on an electronic mini-computer which continuously monitors the quality of combustion in an engine. This information is used to control the air-fuel mixture supplied to the engine, so that combustion is maintained at maximum efficiency. The system requires only one engine sensor, a very small electronic module, and a simple electric valve. The firm says maximum efficiency can be maintained even with varying blends of alcohol and gasoline, so that 15-20 percent improvements in fuel economy and significant reductions of exhaust emissions have been demonstrated. Priced from \$10 to \$100. Agents and licensees are sought abroad. WRITE: Michael D. Leshner, Fuel Injection Development Corporation, Dept. CN, 110 Harding Avenue, Bellmawr, New Jersey 08031 U.S.A.

AUTOMOTIVE ACCESSORY INCREASES GASOLINE MILEAGE -- Installable in less than two hours, the "Vapor King" is carefully engineered to increase gasoline mileage from 20 to 100 percent while reducing average exhaust emissions to as little as .03 percent, an extremely low pollution rate. Gasoline is vaporized by the unit and passes directly into the combustion chamber, bypassing the carburetor. The vaporized gasoline results in a more efficient engine operation and keeps cylinders, valves, rings, and spark plugs virtually free of carbon for a greatly prolonged engine life. Suggested for all gasoline-combustion engines, the "Vapor King" sells for \$150. WRITE: Ted Marshall, Economy Industries, Inc., Dept. CN, 3151 Nationway - C, Cheyenne, Wyoming 82001 U.S.A.

NEW DEVICE IMPROVES EFFICIENCY OF ENGINE COMBUSTION -- The "Paser 500 Performance-Economy Pack" is an electronic device which installs easily on the distributor cap of any ignition-equipped engine and is engineered to increase combustion efficiency through the application of proven electrochemical principles. The firm reports that the unit produces the following benefits, to varying degrees, on any engine: faster starting, smoother running, increased power, lower cylinder-head temperatures, superior mileage, and reduced smog emissions. The manufacturer quotes 20 percent as typical savings on overall engine operating costs. End-users include owners of individual and fleet vehicles, and operators of marine, industrial, and other engines. Cost is \$40. Agents and distributors sought. WRITE: Eugene Irvin, Jr., AmerImex Industries, Inc., Dept. CN, 3251 Oradell Lane, Dallas, Texas 75220 U.S.A.

AUTOMOTIVE DEVICE IMPROVES FUEL MILEAGE, REDUCES POLLUTANTS --

The "Environmental Fuel Saver (EFS)" is engineered to provide better gasoline mileage and lower pollutant emissions through improved vaporization of fuel prior to combustion. According to the manufacturer, mileage increases of 25 percent and pollutant reductions as great as 65 percent are possible with the "EFS." When installed on automobiles or gasoline-fueled trucks, it offers easier starting in cold weather, cleaner engine performance, and extended intervals between servicing. Sells for \$45. The firm seeks distributors, licensees, and joint venture arrangements to handle the unique designs of foreign vehicles. WRITE: Vicki Kosar, VK Manufacturing, Inc., Dept. CN, 1068 Northwest Third Street, Hallandale, Florida 33009 U.S.A.



ADDITIVES FOR MOTOR VEHICLES REDUCE OPERATING COSTS -- This manufacturer offers a series of four additives designed to reduce friction and improve the performance of motor vehicles of all kinds, from motorcycles to construction machinery. Based on a unique formulation which uses molybdenum disulphide (a substance several times more slippery than normal oil) to impregnate and lubricate metal surfaces, these additives are said to increase power transfer, reduce heat and wear, and provide

significant savings in fuel and maintenance costs. The four products are intended respectively for a vehicle's crankcase, fuel system, gear box, and hydraulic system. Price is \$4/pt (.47 l). The manufacturer is seeking agents and/or distributors. WRITE: Eugene Irvin, Jr., AmerImex Industries, Inc., Dept. CN, 3251 Oradell Lane, Dallas, Texas 75220 U.S.A.

BUILDING, CONSTRUCTION AND MATERIALS HANDLING



IMPROVED COLD PLANING MACHINE FOR RECYCLING PAVEMENTS -- Designed to prepare used pavement for resurfacing, the "RX-75 Dynaplane" is a new cold planing machine that levels and profiles the road surface. Engineered to operate over a full lane, the unit removes whatever portion of the paved surface is necessary to re-establish the proper road profile and slope. All asphalts and aggregates which are removed from the surface are properly sized for reprocessing - a feature which reportedly provides significantly lower costs for hot mixes. A rugged, heavy-duty machine, the "RX-75 Dynaplane" sells for \$297,800. The major end-users are governmental agencies involved in highway/street construction and maintenance, and contractors who handle similar jobs. WRITE: P.A. Barber, Barber-Greene Company, Dept. CN, 400 North Highland Avenue, Aurora, Illinois 60507 U.S.A. (Photo)

AUTOMATIC VENT DAMPER FITS STANDARD FURNACES, BOILERS, ETC.--

The "Gas Miser" electric vent damper automatically closes when the burner of a furnace, unit heater, or boiler is switched off. This prevents warm air from escaping unnecessarily, the firm says, and can effect savings of 24 percent on heating fuel. Effective in both home and commercial applications, the "Gas Miser" includes several features said to make it safer than alternative damping systems. A safety thermostat prevents the damper from closing when vent temperatures reach approximately 200 degrees F (93 degrees C). An extra precaution is the special fusible link which melts at a predetermined temperature automatically opening the damper. In the event of a power failure, an automatic "spring return" opens the unit. Price is \$40-\$50. The firm seeks European representatives who deal in heating, ventilating, and air conditioning equipment. WRITE: Stanley M. Rosen, Paragon Resources, Inc., Dept. CN, 21211 Telegraph Road, Southfield, Michigan 48037 U.S.A.



VENTILATION CONTROL UNIT MONITORS AIR QUALITY -- The "PAJ-01 Ventilation Control System" electronically determines the quantity of outside air needed for ventilation by measuring the amount of oxygen actually used by the occupants of a room or building. Since exterior air is admitted only when the quality of the interior air falls below a predetermined level, there can be substantial savings in the energy needed for heating and cooling. The "PAJ-01" is designed for any heating/ventilating/air conditioning system which uses a modern electric, electronic, or pneumatic control system. Suitable to all commercial and public buildings, as well as some industrial sites. Priced at \$600. The firm seeks agents, distributors, and licensees. WRITE: John R. Anderten, Energy Controls, Inc., Dept. CN, 394 Bryant Street, Denver, Colorado 80219 U.S.A.

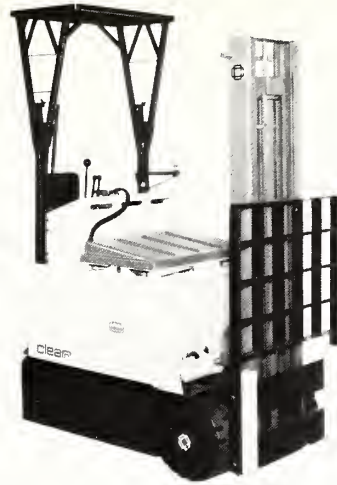
THERMOSTAT WITH DUAL TEMPERATURE SETTINGS -- The "NRG Saver III" is an energy-conserving room thermostat with two separate temperature set point dials and scale ranges capable of being set for any two temperatures between 50 and 90 degrees F (10-32 degrees C). Useful for heating/cooling or day/night setback functions, the unit is said to produce energy savings up to 20 percent. Both temperature settings are easily viewed on the front of the thermostat without removing the cover. A central pneumatic signal will automatically switch control modes for all thermostats throughout the building or by zone. Manual overrides

for each thermostat are available. Used in office buildings, hospitals, universities, and other commercial sites. Price is \$35. Distributor inquiries are invited. WRITE: A.W. Kaiser, Powers Regulator Company, Dept. CN, 3400 Oakton Street, Skokie, Illinois 60076 U.S.A.



HYDRAULIC CRANE DESIGNED FOR ROUGH GROUND CONDITIONS -- The manufacturer says that the "Omega" hydraulic crane, designed especially for difficult terrains, incorporates important engineering advances in design and weight reduction which make it energy-efficient. Several innovations lower the crane's weight. Among other things, active machinery is used in place of inactive steel counterweights to create the necessary balance for the lift-arm. The hydraulic system has also been significantly streamlined to minimize the accumulation of heat and loss of power. Superior mechanical efficiency, the firm notes, results from a careful selection of power train components. Finally, the engine is located at the front of the carrier where ambient air helps to cool the machinery for better fuel efficiency. Priced from \$65,000. WRITE: Karl H. Rathmann, Hahnischfeger Corporation, Dept. CN, P.O. Box 554, Milwaukee, Wisconsin 53201 U.S.A. (Photo)

IMPROVED FORKLIFT DESIGN SAVES ENERGY -- The "Model ESU Forklift" possesses an innovative, new system for propulsion, lifting, and tilting which eliminates a large part of the electrical and mechanical components common in other forklifts. Its simplified design removes much of the potential for service problems and, according to the manufacturer, consumes far less energy than conventional models. A single electric motor powers a tandem (hi-lo) pump which provides power for propulsion, lift, and tilt. For operations requiring speed, the pump produces a high volume of oil at low pressure. For those requiring torque, the pump provides a low volume at high pressure. Priced at \$6,000.



WRITE: Andy Steinfeldt, Clearr Corporation, Dept. CN, 150 West 60th Street, Minneapolis, Minnesota 55419 U.S.A.

SOUND-ABSORBING, DECORATIVE INSULATION FOR INTERIOR WALLS -- "Insul-Art" acoustical wall treatments are said to provide an effective level of insulation which can significantly improve a wall's thermal efficiency. The product's fiberglass core can be press-molded to a thickness as great as 3 in (7.5 cm). Design flexibility permits the insulation to be custom-built to meet a broad range of acoustical, aesthetic, and mechanical requirements. The firm notes that sound absorption factors up to 1.00 NRC can be specified and special features provided that assure privacy in speaking. Flat panels, with fire-resistant facing materials, are available in sizes up to 5 ft (1.5 m) wide and 12 ft (3.6 m) long. Curved panels and custom-built shapes can also be ordered. Sells from \$30 to \$100. WRITE: Jared March, Insul-Coustic Corporation, Dept. CN, Jernee Mill Road, Sayreville, New Jersey 08872 U.S.A.

NEW ROOM DAMPER PREVENTS NEEDLESS WASTE OF "CONDITIONED" AIR -- Building codes and standards of personal hygiene alike require that air be exhausted from occupied rooms. Conventional room dampers answer this need but also waste heated or air conditioned air by operating when rooms are unoccupied. The "Savex" is an individually operated room damper that opens and closes as a room's light switch is turned on and off. Energy savings are significant since "conditioned" air is exhausted only when really

necessary. The manufacturer says the "Savex" is attractive in appearance, modest in cost, and inexpensive to operate. Price per unit is \$45. WRITE: Mr. Bookbinder, Penn Ventilator Company, Inc., Dept. CN, Red Lion and Gantry Roads, Philadelphia, Pennsylvania 19115 U.S.A.

ENERGY MANAGEMENT SYSTEMS

LOW-COST ENERGY CONTROL SYSTEM SAVES UP TO 50 PERCENT ON ENERGY --

This firm is introducing an electronic control system guaranteed to reduce the cost of heating/air conditioning a normal commercial or industrial building by at least 15 percent.

Capable of producing energy savings as high as 50 percent, the "Energy Master" uses a 7-day programmable clock which permits temperatures to fall as low as 40 degrees F (4.5 degrees C) in an entire building (or any portion of it) during unoccupied periods. A special feature of the device is that it controls heating and air conditioning units with signals transmitted through a building's ordinary electrical wiring. This simplifies installation and makes it possible for the "Energy Master" to pay back the price of its purchase within one year. WRITE:

Stanley Spiegel, Energy Master, Inc., Dept. CN, Suite 610, 103 Park Avenue, New York, New York 10017 U.S.A.



LOW-COST MICRO-COMPUTER SYSTEM FOR ENERGY MANAGEMENT -- This firm is seeking worldwide distributors for a micro-computer energy management system priced, the firm says, for the first time within the range of moderate-level energy users. Selling for \$1,000, the "Energy Eight" gives centralized control of energy-consuming devices such as heating and air conditioning systems. Energy use is strictly controlled by cycling various loads on and off according to a pre-set program. The "Energy Eight" has no moving parts and is said to be no more difficult to operate than a hand calculator. Potential end-users include hospitals, banks, insurance firms, and almost all industrial companies. WRITE: Jack Kantor, K&D Corporation, Dept. CN, 102 South Harbor City Boulevard, Melbourne, Florida 32901 U.S.A.

ENERGY MANAGEMENT SYSTEM CONSERVES ELECTRICITY -- The "Seaboard Energy Management System" is a microprocessor-based system designed specifically to reduce consumption of electricity. It operates 24 hours a day, monitoring and controlling the use of electricity. As required, the system will temporarily shut down preselected electrical units such as exhaust fans, air conditioners, heaters, battery chargers, etc. Each shutdown lasts only a few minutes, but the cumulative effect, according to the manufacturer, is a significant reduction of the overall cost of electricity. Productivity and comfort levels, the firm notes, are not seriously affected. End-users include hospitals, factories, office buildings, and newspaper producers. Sells from \$13,000 to \$15,000. The company is seeking agents abroad. WRITE: George DeMambro, Seaboard Energy Management, Dept. CN, 25 Industrial Park Road, Hingham, Massachusetts 02043 U.S.A.

ENERGY MANAGEMENT SYSTEM -- The "TC5TI" is a system which monitors and controls the amount of energy used by an industrial or business operation. Controlled by a centrally located microprocessor computer, the "TC5TI" is said to offer a range of features ordinarily available in much more expensive systems. Listed functions include: 1) seven-day scheduling and cycling; 2) advanced demand control and shed control mechanisms; 3) a large number of control points; 4) a manual by-pass system; 5) integral diagnostic capacity; 6) an optional printer unit. Possible applications in hotels, motels, hospitals, schools, apartment buildings, factories, and office buildings where an efficient, inexpensive system is needed. Priced from \$5,000. Agent inquiries are invited. WRITE: D.S. Miller, Terra Corporation, Dept. CN, P.O. Box 2204, Jackson, Tennessee 38301 U.S.A.

COMPUTERIZED SYSTEM FOR ENERGY MANAGEMENT -- The "S-170 Energy Management Computer" is specifically designed to regulate energy usage in commercial buildings such as hospitals, universities, and office buildings. The firm says it averages energy savings of 25 percent through its automatic energy-management functions: peak demand limiting; duty cycle control with temperature compensation; time-of-day programming; adaptive start-time optimization; set point adjustment; analog and binary alarms with printed records; weekend and holiday scheduling, and event programming. Easy to install, operate, and maintain, the "S-170" sells from \$10,000 to \$25,000. Distributor inquiries welcome. WRITE: A.W. Kaiser, Powers Regulator Company, Dept. CN, 3400 Oakton Street, Skokie, Illinois 60076 U.S.A.

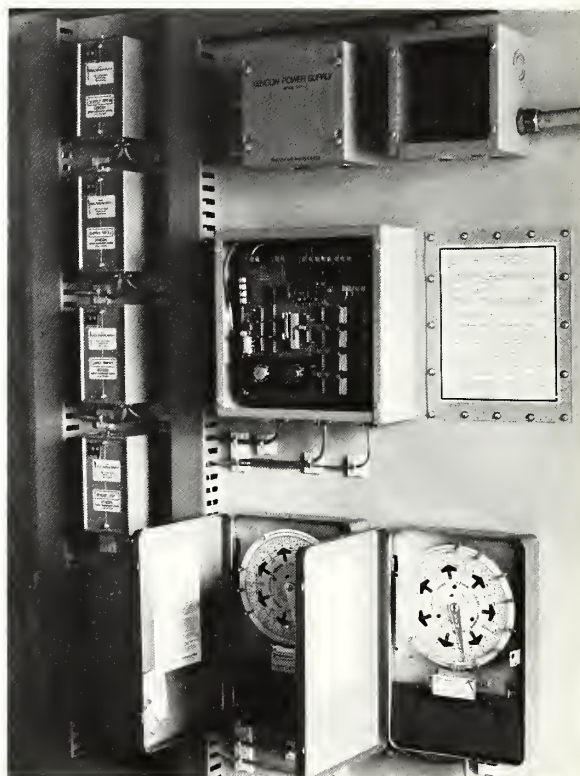
ENERGY MANAGEMENT SYSTEMS FOR COMMERCIAL, PUBLIC BUILDINGS -- Owners of factories and other commercial or public buildings will be interested in these two systems designed to monitor and limit the use of energy. The "Wattmaster Optimal Sequencer"

operates through remote electronic temperature sensors placed throughout a building. Beginning with those building areas where the temperature is nearest the comfort level, the computerized system automatically shuts down heating and air conditioning units in order to meet pre-set limits on energy use. The "Wattmaster System Programmer" is programmed to turn off temperature-control units and other electric loads when they are not needed -- at night, over weekends, during holidays. Able to store four independent 7-day programs, the system also offers features for switching to holiday schedules, delaying the preset night schedule (for late business meetings, etc.), and activating other functions with minimum difficulty. The firm is seeking distributors for the two systems. Price range for each is \$1,500-\$2,500. WRITE: Donald O. Smith, Viron Corporation, Dept. CN, 1338 McGee Street, Kansas City, Missouri 64106 U.S.A.

PROGRAMMABLE CONTROL SYSTEM FOR UP TO 40 ELECTRICAL LOADS --

The "Xencon Load Controller" is a reliable solid-state device for reducing electrical energy consumption. The system switches electrical loads on and off according to a programmed cycle for each load group. The system can handle as many as 40 loads (four groups of 10 loads each) and is recommended for controlling air conditioning systems, electric hot water heaters, walk-in coolers or freezers, air compressors, etc. The firm says the simplified, solid-state construction provides a reliable, inexpensive system appropriate for most commercial, industrial, or institutional facilities. Cost is \$1,695.

WRITE: Donald J. Buttaro, Xencon, Dept. CN, 150 Mitchell Boulevard, San Rafael, California 94903 U.S.A.



INSULATION AND SCREENING MATERIALS

ENERGY-SAVING FILM INSULATES WINDOWS -- This firm has developed an attractive insulating film for windows which is intended to answer the increasing demand for energy conservation. Used on buildings, automobiles, boats, and other vehicles, the "Solar Master" film can reportedly save up to 60 percent of the energy used in temperature control. Formulated from a tough polymer,

it also gives windows an extra safety factor by making them shatter-resistant. Since the film has a built-in polarization effect, it becomes transparent only to those inside the building or vehicle. Privacy and security are thus increased and the appearance of the protected building enhanced. Protects furniture, drapes, etc. from fading. Priced at 30 cents/sq ft (.09 sq m). Agent inquiries invited. WRITE: Paul J. Dorsie, General Solar International Corporation, Dept. CN, 451 South Stonestreet Avenue, Rockville, Maryland 20850 U.S.A.

LOW-COST INSULATING SYSTEMS FOR WINDOWS -- This firm manufactures "Magnetite" and "Insulite," two inexpensive window insulating systems which are said to surpass storm windows in their ability to provide comfort and save energy. The firm states that either system will double a window's resistance to conduction (thereby lowering heat loss) and eliminate penetration of cold air. "Magnetite" uses a flexible, magnetic strip which adheres directly to any steel window frame, securing a sheet of acrylic glazing over the window for effective insulation. The "Insulite" system fastens adhesively to any window glass or frame, but it is especially suited to windows with irregular shapes. Designed for long service lives, these two products are said to blend well with any interior design. Easy to install, they sell from \$2 to \$2.50/sq ft (.09 sq m). FOR INFORMATION ON "MAGNETITE," WRITE: Kenneth J. Foster, ECON, Inc., Dept. CN, 286 Congress Street, Boston, Massachusetts 02210 U.S.A. FOR INFORMATION ON "INSULITE," WRITE (export representative): David Dayton, Northeast Energy Corporation, Dept. CN, 11 Beacon Street, Boston, Massachusetts 02108 U.S.A.

WINDOW SCREEN BLOCKS UP TO 75 PERCENT OF SUN'S RADIATION --Simple to install on any window or door, the "Phiferglass SunScreen", according to this firm, will block up to 75 percent of the sun's heat, light, and glare. This results in lower interior temperatures, reduced utility bills, and less operational wear on air conditioning systems. Designed for both commercial and residential use, the "SunScreen" offers approximately 15 years of use with little or no maintenance. Its special design, which uses woven fiberglass yarn, permits ventilation when the window or door is open and also serves as an effective insect screen. Other advantages: reduced fading of rugs, drapes, and furniture; increased privacy during daylight hours; unimpaired view of the outdoors. Sells from \$20 to \$40 per roll. Agent inquiries welcome. WRITE: Jere M. Dabbs, Phifer International Sales, Inc., Dept. CN, P.O. Box 1700, Tuscaloosa, Alabama 35401 U.S.A.

ADHESIVE FILM PROVIDES INSULATION FOR WINDOWS -- "Solar-X" window film is a polyester sheet (clear or tinted) with a transparent-reflective metal coating. Designed to adhere permanently to the

insides of windows, it reportedly stabilizes inside temperatures and improves comfort by lowering heat gain by up to 75 percent in hot weather and heat loss by as much as 25 percent in cold weather. It is also an efficient means to conserve energy since it reduces air conditioning and heating requirements. "Solar-X" can reduce fading of drapes, carpets, etc. caused by ultra-violet radiation and help to make glass windows shatter-resistant. WRITE: Mr. A.D. LeMonte, Solar-X Corporation, Dept. CN, 25 Needham Street, Newton, Massachusetts 02161 U.S.A.



TRANSPARENT WINDOW INSULATION -- "Reflecto-Shield," a transparent insulating film for windows, reduces solar heat passing through glass by as much as 80 percent, thus lowering air conditioning needs. During cold weather, it reduces heat loss through the glass by up to 14 percent, helping to control heating costs. The film consists of a microscopically thin layer of aluminum between layers of polyester laminate which does not cause visual distortion. It effectively helps to eliminate glare, reduce fading of drapes, rugs, and furniture from exposure to sunlight, reduce danger from shattered glass, and improve the appearance of buildings. The company is seeking agents. WRITE: Charlotte King, MADICO, Inc., Dept. CN, 64 Industrial Parkway, Woburn, Massachusetts 01801 U.S.A. (Photo)

WINDOW INSULATION FOR PERMANENT INSTALLATION -- "Thermalite" is a self-adhering window insulation developed to meet the need for an inexpensive, light-transmitting insulation which could be easily "retrofitted" to existing single-glass windows. It is a translucent material with a cellular "honeycomb" structure that can provide, according to the company, as much as 40 percent reduction of heat loss per unit-area. Coated on one side with a transparent, pressure-sensitive adhesive, "Thermalite" can be pre-cut and applied directly to the inside of a window for a permanent installation that requires little or no maintenance. The overall heat transmission coefficient (U-value) is reportedly reduced from 1.13 to .63. Ideal for commercial, industrial, and institutional buildings. Sells for approximately 35 cents/sq ft (.09 sq m). WRITE: Hugh Shulock, Alpha Associates, Inc. Dept. CN, 2 Amboy Avenue, Woodbridge, New Jersey 07095 U.S.A.

NEW DESIGN IN SUN SCREENING LOWERS AIR CONDITIONING NEEDS --

Made from unique vinyl-coated fiberglass fabrics, the "Pratico Comfortrol" is a carefully designed sun-screening product which is intended to reduce air conditioning requirements in summer, or even year-round in very warm climates. Both direct and indirect solar rays are reflected, lowering heat gain in protected buildings. Since the attractive screen is transparent, views from windows or doorways are not blocked. The "Pratico Comfortrol" is also an effective insect screen and can provide a limited amount of privacy from outside viewers. When not needed, the screen retracts on an aluminum roller. Priced according to size. The firm is actively seeking window manufacturers



and agents. WRITE: N.C. Pratico, Pratico Supply Company, Dept. CN, 821 River Road, Yardley, Pennsylvania 19067 U.S.A.

FIRE-RESISTANT THERMAL/SOUND INSULATION -- This firm states that its "Unitemp Insulation" is made of one of the most effective thermal insulators available - wood fiber - impregnated with an exclusive chemical formula and subjected to strict quality control measures, to ensure several important characteristics. "Unitemp" is flame-retardant, non-corrosive, resistant to vermin, and odorless. In addition, it contains no starch and is designed to absorb a minimum amount of moisture. The company says the product is easily installed by hand or machine and offers no danger to installers. Each 40 lb (18.14 kg) bag sells for

approximately \$5. The firm is seeking overseas agents. WRITE: David H. Lewis, Tiger Trading Corporation, Dept. CN, 1706 Broadway, Suite 401, Oakland, California 94612 U.S.A.

RESIDENTIAL SIDING OFFERS GOOD INSULATING QUALITY -- Available in brick, stone, or simulated woodgrain designs, this attractive mineral-surfaced siding has a low installation cost and is easily applied by homeowners. Its good insulation values and long life, according to the firm, can conserve energy and reduce the cost of heating or air conditioning. The siding also features ceramic-fired granules which protect the siding for years of ordinary wear, never need painting, and generally improve the product's appearance. The firm backs its product with a 40-year warranty. Priced at \$30/100 sq ft (9 sq m). WRITE: Charles M. Mattes, Mastic Corporation, Dept. CN, P.O. Box 65, 131 South Taylor Street, South Bend, Indiana 46624 U.S.A.

CHEMICAL AND PETROCHEMICAL INDUSTRIES

NEW REACTOR FOR MAKING DETERGENT BASE PRODUCTS -- Representing, according to the firm, a major breakthrough for manufacturers of detergents and surfactants, the "Impact Jet Reactor" takes only a fraction of a second to produce sulfonation reactions of sulfur trioxide with any of a wide variety of natural and synthetic oils. Its unique design has no moving parts and works with air compression and drying equipment of half the standard size and power requirements. Only 1/1000th the size of conventional "batch reactors," it also provides a much quicker reaction time, preventing product degradation. Used in making detergent bases for cosmetics, soap, paint, etc., the unit sells for \$1,000,000. WRITE: Dr. E.E. Hackman III, NST/Engineers, Incorporated, Dept. CN, P.O. Box 2857, Wilmington, Delaware 19805 U.S.A.

INDUSTRIAL CARBURETOR SAVES 20 PERCENT ON FUEL -- Typically used by oil and gas producers who operate 2 or 4-stroke cycle engines using natural gas fuel, the "Todd Carburetor Conversion System" is designed to maintain an efficient air-to-fuel ratio under all running conditions. It will also stop the flow of fuel if the engine stalls. These two features, the firm says, can save up to 20 percent on fuel usage. The engine starts more easily, which reduces wear on the starter mechanism, and runs more smoothly and cleanly, thus lowering carbon build-up. Complete kits, with carburetor, adapters, and all necessary parts, sell from \$100 to \$500. Agent inquiries are invited. WRITE: Bill Todd, Todd's Service and Supply, Inc., Dept. CN, Highway 14-16 West, Gillette, Wyoming 82716 U.S.A.

STREAMER HYDROPHONE FOR OIL EXPLORATION, GEOLOGICAL SURVEYS --

The "Century 21" streamer hydrophone is an element used in seismic streamer arrays for oil exploration and geological surveys. The company believes the unit to have a combined sensitivity, bandwidth, and capacity superior to that of any other hydrophone element available. Since it weighs only .63 g (.022 oz) in water, it is nearly neutrally bouyant -- an important consideration for the construction of a complete array. The product sells for \$20 per unit in small quantities. Complete hydrophone arrays using the "Century 21" are also manufactured to the buyer's specifications. The company is seeking agents and distributors. WRITE: Darrel F. Sedivec, Energy International, Dept. CN, 18 Campo Seco Street, Lawrence, Massachusetts 01841 U.S.A.



CHROMATOGRAPH AIDS ENERGY EFFICIENCY -- A microprocessor-based process chromatograph system, the "OPTICHRON 2100" is engineered to help improve energy efficiency and performance through its simple operation, self-diagnostic capacity (for easy maintenance), rugged construction, and sophisticated calculation capability. It uses the established method of gas-liquid chromatography to analyze process streams in petroleum, petrochemical, and chemical plants. The firm says the unit's new design assures superior analysis ability and long-term performance. Price range of \$20,000-\$40,000 includes a programmer unit which operates four analyzers. The firm welcomes agent inquiries. WRITE: Lee DeMartino, Applied Automation, Inc., Dept. CN, Pawhuska Road, Bartlesville, Oklahoma 74004 U.S.A. (Photo)

COMPUTERS AND PERIPHERALS

UNIT CONDITIONS POWER LINE FOR SENSITIVE ELECTRONIC EQUIPMENT -- Designed especially for minicomputer and microprocessor users whose equipment requires a "dedicated" (independent) power line, the "Line 2 Power Line Conditioner" offers more than 140 decibal noise suppression to protect such sensitive equipment as electronic medical instruments, electronic cash registers, security systems, and electronic test equipment. Its superior voltage regulation, the company says, provides up to 94 percent efficiency, saving the user both energy and money. Since the unit plugs directly into any 120V electrical outlet, there is no need to waste time waiting for the installation of a "dedicated" power line. Portable, the "Line 2" sells from \$400 to \$700. The firm seeks agents abroad. WRITE: J.R. Cushman, Topaz Electronics, Dept. CN, 3855 Ruffin Road, San Diego, California 92123 U.S.A.

CONSUMER GOODS



INEXPENSIVE HOME GREENHOUSE SAVES ENERGY -- The firm says this is the first truly practical home greenhouse which is sturdy, portable, and very inexpensive. Priced at \$100, the "Gro-Dome" offers 12.1 sq m (14.5 sq yd) of growing area and the professional standards needed to grow greenhouse-quality plants and crops, including orchids, tropicals and other exotic plants, even vegetables. The manufacturer notes that its unique design saves

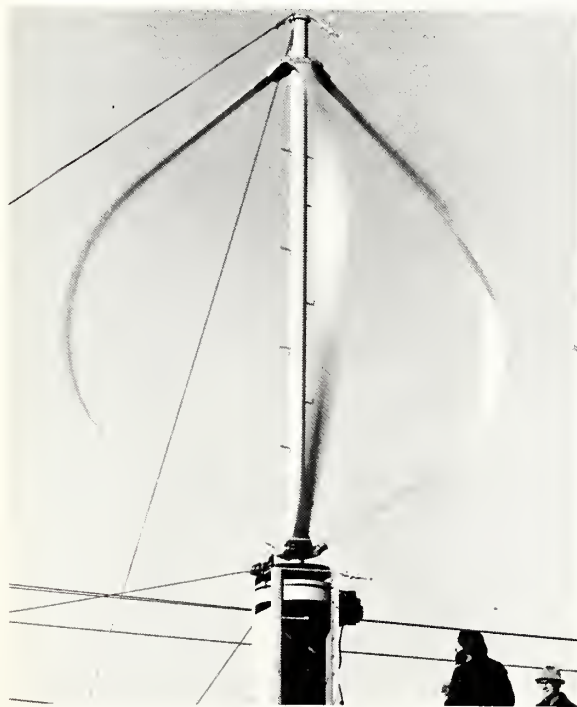
water and energy while offering home gardeners the capacity to grow plants in all seasons. The "Gro Dome" can be assembled without tools in as little as 30 minutes. Distributor and agent inquiries are welcome. WRITE: Gregory H. Romine, Botanical Environments, Dept. CN, 1044 Pioneer Way, El Cajon, California 92020 U.S.A.

ONE-PIECE DOOR SEAL HELPS CONSERVE ENERGY -- Available in white or brown vinyl, the "V-557 Door Seal" automatically creates a tight seal between a door and door stop. This one-piece product is engineered to attach to the door stop with minimum difficulty. Its extruded form includes a flexible bulb which meets the door as it closes and bends to form a shape-fitted seal. This prevents drafts and affords an inexpensive but effective means to conserve energy. The "V-557" can be painted, the firm notes, to match the room decor. All fasteners are included and the necessary holes are pre-punched. Retail price is \$3.75. The firm is seeking agents and distributors abroad. WRITE: W. Matson, The Loxcreen Company, Inc., Dept. CN, P.O. Drawer 4, West Columbia, South Carolina 29169 U.S.A.

ENERGY: Solar

WIND-POWERED SYSTEMS

VERTICAL-AXIS WIND TURBINE -- This company is currently producing a 5-meter (5.5 yds) Darrieus-type Vertical Axis Wind Turbine



(VAWT) designed to provide power in areas where wind conditions make the unit economical. Typically used for pumping, providing heat, and generating electricity, this wind turbine is engineered to provide approximately 6 1/2 HP from winds of 25 MPH (40 KPH). The "VAWT" employs three extruded aluminum alloy blades which, the manufacturer notes, were developed by the Aluminum Company of America (ALCOA). The turbine design, the result of years of development, is intended to tap the natural, renewable energy of the wind for an efficient, non-polluting source of power. Sold from \$7,000 to \$10,000. WRITE: Gardiner G. Greene, Dynergy Corporation, Dept. CN, P.O. Box 428, Laconia, New Hampshire 03246 U.S.A.

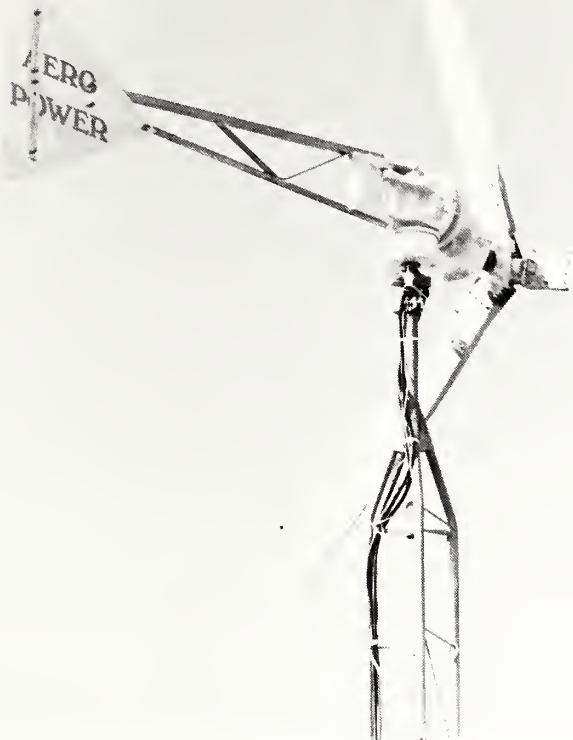
NEW CONCEPT IN WIND-POWERED WATER PUMPS -- The manufacturer believes this product to represent the first major improvement in windmill-powered water pumps in nearly 4,000 years. Since the "Bowjon Windmill" does not have to stand immediately above the well or other water source, it can be placed away from trees, buildings, and other obstacles, in the most advantageous spot for catching the wind. The pump uses air pressure to lift up to 5 gal (19 l) of water per minute and, since it has no moving parts, it can not be damaged by "running dry." Easily installed in half a day by a single worker, the "Bowjon Windmill" is recommended for supplying household water needs, watering livestock, operating drip irrigation systems, etc. Sells for \$595.



Agent inquiries are welcome. WRITE: Thomas M. Dye, Bowjon Company, Dept. CN, 2829 Burton Avenue, Burbank, California 91504 U.S.A.

POLLUTIONLESS SYSTEM TAPS WIND-POWER -- The "Wind Titan," one of the latest innovations for tapping wind-power, is said to be an economical, pollution-free method of generating electricity. Systems are available which generate 500 watts to 40 kilowatts of power in winds of 25 mph (40 km/hour). All include a "Centraxis Governor" which permits the turbine to deliver high torque even in moderate wind speeds. Another standard feature, the "Para-Wind Rudder," folds in winds greater than 65 mph, placing the plane of the propellor parallel to the direction of the wind. This provides automatic protection during storms. Price range is \$800-\$100,000. End-users include: farms, villages, homes in rural or undeveloped areas. Also useful for commercial television repeaters, telephone relay, offshore navigation, etc. Agents sought. WRITE: Tom W. Rentz, TWR Enterprises, Dept. CN, 72 West Meadow Lane, Sandy, Utah 84070 U.S.A.

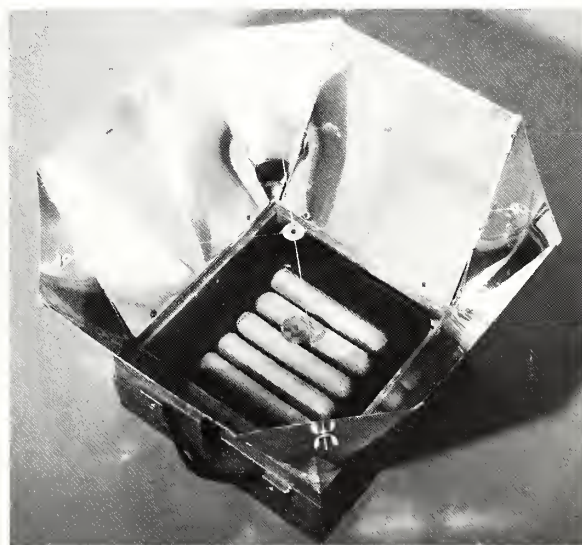
WIND-POWERED SYSTEM FOR GENERATING ELECTRICITY -- The global search for new sources of energy has led this firm to produce the "SL1000 Wind-Powered Generator." This automatic battery-charging system reaches its rated output (1,000 watt, 75 amp, 12 volt) at wind speeds of 32.3 km (20 mi) per hour. This is enough electricity to power an energy-efficient home. Any power generated above that being used is stored in batteries for times when there is no wind. Breezes as low as 9.7 km (6 mi) per hour can supply power. Priced from \$3,000-\$5,000. Dealers sought. WRITE: Mario



SOLAR SYSTEMS, SOLAR COLLECTORS, & ACCESSORIES

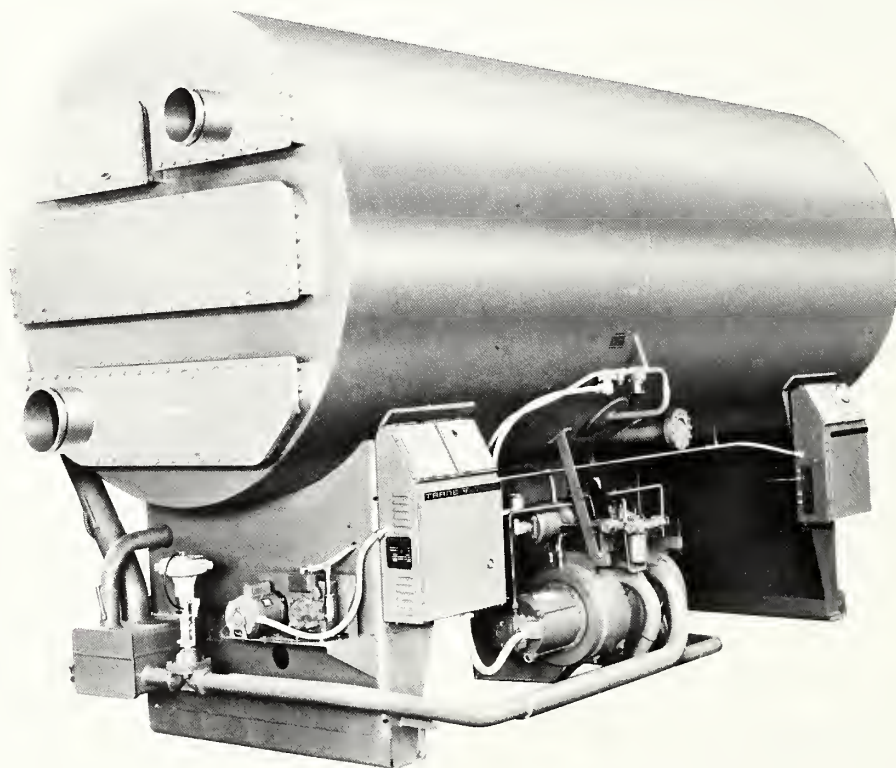
PORTABLE SOLAR COOKING UNIT --

The "Solar Cooker" is a low-cost, high-performance cooking device which, the firm says, can prepare almost any food (hot dogs, hamburgers, eggs, chicken, potatoes, etc.) using no power but direct sunlight. Lightweight and compact for easy carrying, the unit is designed to produce temperatures as high as 350 degrees F (177 degrees C) in summer or winter weather. The solar collectors are made of hardened aluminum with maximum reflecting qualities, and the sturdy cooking compartment is constructed of solid, fully insulated mahogany. Flameless, safe to use, the



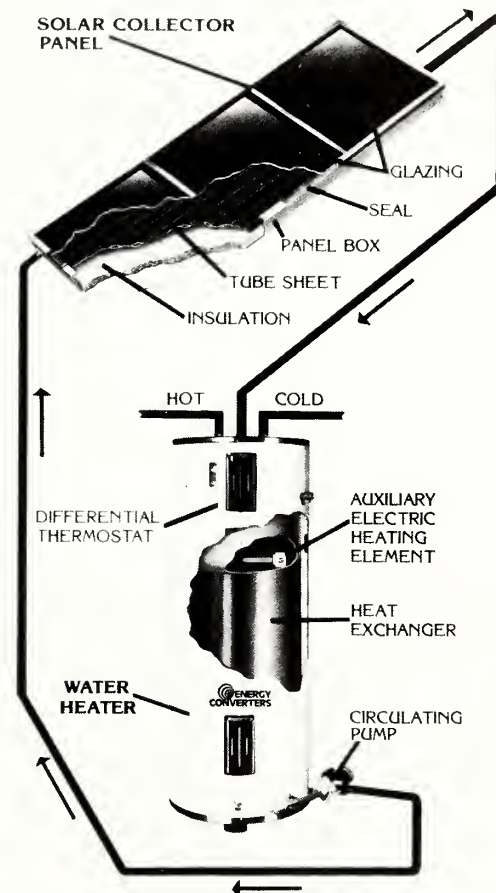
"Solar Cooker" is suggested for hunting, fishing, camping, hiking, or basic back yard use. Sells from \$45 to \$55. Agent inquiries welcome. WRITE: Mr. A. March, International Impex Marketing, Inc., Dept. CN, Suite 716, One Cherry Hill, Cherry Hill, New Jersey 08002 U.S.A.

SOLAR AIR CONDITIONING UNITS -- Used primarily to chill water for air conditioning systems, these "Solar Absorption Cold Generators" are engineered for use with low temperature heat input from solar collector panels or from waste heat. The company says the units will operate on hot water or steam at temperatures from 165 to 270 degrees F (74-132 degrees C). They can be used in large solar cooling systems for industrial buildings, schools, apartment buildings, hospitals, or large office buildings. Capacities range from 20 to 1,660 tons (18-1,494 t). Unit reliability is assured by several features: single shell construction; single hermetic pump; corrosion-resistant cupro-nickel absorber tubes; fixed and floating concentrator tube supports. Priced from \$26,000 to \$190,000. WRITE: Hans Gartner, The Trane Company, Dept. CN, 3600 Pammel Creek Road, La Crosse, Wisconsin 54601 U.S.A. (Photo)



SOLAR COLLECTOR WORKS EVEN ON CLOUDY DAYS -- The "General Solar Heat Pump," according to this firm, marks an important advance in solar collector technology. The collector unit uses copper tubes containing refrigerant to collect heat. This heat is transferred, through a compressor and condenser, to the water lines leading to existing water heaters and/or indoor air coils (for space heating). This process makes the solar collector cooler than the surrounding air, thereby significantly improving its efficiency. Radiated heat losses are virtually eliminated, the firm explains, and heat is collected from the air even when little or no sunlight reaches the collector. Ideal for areas with long periods of cloudy weather. The firm is seeking agents abroad. WRITE: Albert Nunez, Jr., North American Solar Development Corporation, Dept. CN, P.O. Box 332, Stanardsville, Virginia 22973 U.S.A.

SOLAR WATER HEATER FOR ALL CLIMATES -- A complete water heating system, the "Solarsaver" uses sunlight to provide up to 110 gal (416 l) of hot water (150 degrees F/65.56 degrees C) each day - enough hot water for a family of four or a small business. An auxillary heating system assures up to 30 gal (114 l) of hot water an hour during overcast weather or at night. The unit features two high-efficiency solar collector modules, an 80-gal (303 l) steel storage tank with a two-coat glass lining, a double wall heat exchanger, pump, and solid-state electronic controls. Sells from \$1,250 to \$1,500. Agents, distributors, and licensees are sought. WRITE: John F. Connelly, Jr., Energy Converters, Inc., Dept. CN, 2501 North Orchard Knob Avenue, Chattanooga, Tennessee 37406 U.S.A.



SOLAR SPACE HEATING/HOT WATER SYSTEM -- Ideal, the firm says, for space heating or for supplying hot water (potable or non-potable), the "AHC Solar Heating System" consists of a closed, inhibited antifreeze solar collector circuit which is coupled to a water storage tank through a counter-flow heat exchanger. Space heating is provided by heated water which is pumped through a coil in the cold air return in the furnace. Solar power is also used to

preheat domestic water by means of a 40-gallon (152 l) preheating tank immersed in the solar storage tank. The manufacturer notes that the system uses only standard components to minimize cost and maintenance while assuring maximum reliability. The firm seeks overseas agents. WRITE: Albert Nunez, Jr., North American Solar Development Corporation, Dept. CN, P.O. Box 332, Stanardsville, Virginia 22973 U.S.A.



SOLAR PANEL PROVIDES ELECTRICITY FOR VARIETY OF USES -- The rugged "4200JG Unipanel" is a solar electric panel which generates approximately 22 peak watts at 12 volts. Lightweight and easy to install, it is a perfect way, the firm says, to provide electricity when centrally generated power is unavailable or expensive. The panels can be used singly to power 12-volt systems or in series/parallel arrays to provide current increased by multiples of 12 volts. Its active elements are high-efficiency silicon solar cells encapsulated on the rear surface of a high-transmittance tempered glass plate in weatherproof silicone rubber. Used in communications, water pumping, lighting, cathodic protection of steel, etc. Priced from \$300 to \$600. WRITE: Al McKegg, Solarex Corporation, Dept. CN, 1335 Piccard Drive, Rockville, Maryland 20850 U.S.A. (Photo)

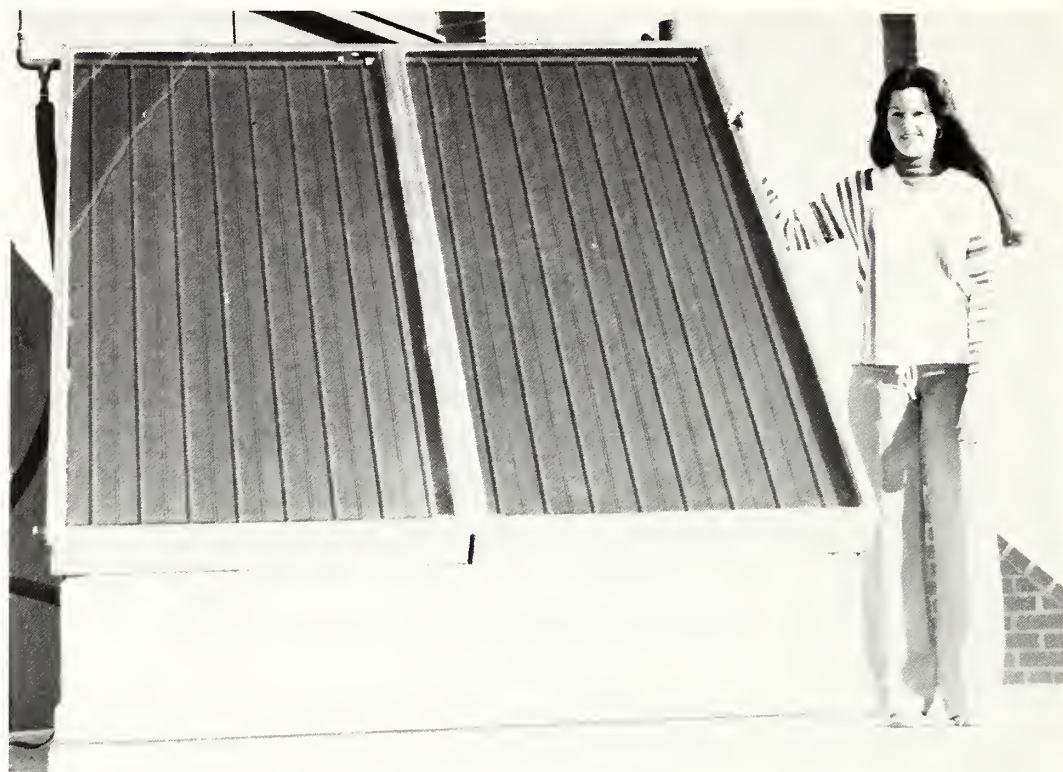
LOW-ENERGY PUMP FOR SOLAR HEATING, WASTE HEAT RECLAMATION -- The "CP Solar Pump" features a magnetic drive designed to circulate water in solar heating equipment and waste heat reclamation units. The firm says that advanced motor features and special graphite bearings reduce operational friction, thereby providing significant savings on energy consumption. Equally applicable to hot and cold water applications, this low-energy pump sells from \$30 to \$40. The company is seeking agents abroad to sell to manufacturers of solar heating equipment and waste heat reclamation equipment. WRITE: Steve Matthews, Hartell Division, Milton Roy Company, Dept. CN, 70 Industrial Drive, Ivyland, Pennsylvania 18974 U.S.A.

SOLAR-POWERED HEATING UNIT FOR POOLS AND SPAS -- The Sun-Bank Pool Heater" uses the free energy of the sun to warm the water in swimming pools, hot tubs, or spas. Its attractive design, the firm says, makes it ideal for hotels and other places where appearances are important. Each collector uses a thin sheet of water which adheres through surface tension to the lower side of the absorber plate and passes down the length of the unit. As it runs down the absorber plate, the water absorbs the heat generated by the unit's dark outer surface. Each solar panel produces approximately two gallons of heated, clean water per minute. Priced at \$200 and up. Agent inquiries are welcome. WRITE: Albert Nunez, Jr., North American Solar Development Corporation, Dept. CN, P.O. Box 332, Stanardsville, Virginia 22973 U.S.A.

SOLAR AIR HEATER OFFERS IMPROVED THERMAL PERFORMANCE -- Intended for hospitals, hotels, and other buildings which need a constant flow of pre-heated fresh air, the "Double Absorber Air Heater" is said to provide improved heat-transfer characteristics. Solar energy is collected on each of two surfaces which contact the flow of fresh air. By simultaneously transferring heat to the air from two surfaces, the thermal performance of the collector is increased and pressure drops are reduced. The unit can also be used to provide hot water, for space heating, etc. This low-weight, high-efficiency solar collector sells for \$210-\$300. The company seeks agents abroad. WRITE: Elliot Berman, Sun Systems, Inc., Dept. CN, 170 Granite Avenue, Dorchester, Massachusetts 02124 U.S.A.

ECONOMICAL, NON-CORROSIVE, NON-TOXIC SOLAR COLLECTOR FLUID -- The firm says that "H-30" is a safe, efficient, reliable solar collector fluid that will not attack rubber. It enables manufacturers to develop less expensive materials for their collectors. Two variants are available: one for flat-plate collectors, another for parabolic/concentrator collectors. The company says its chemical properties, designed to remain effective for decades, exceed those required for an efficient heat-transfer fluid: boiling point, 327 degrees C (621 degrees F); freezing point, -40 degrees C (-40 degrees F); pH, 7.2-7.8; thermal conductivity,

.070-.075. Also said to be excellent for industrial heat transfer applications. Agents, distributors, and joint-venture situations now being sought. Priced from \$8 to \$10 per gallon (3.8 l).
WRITE: Philip H. Mark, Mark Enterprises, Inc., Dept. CN, 30 Hazel Terrace, Woodbridge, Connecticut 06525 U.S.A.



SOLAR-POWERED WATER HEATER -- Ease of installation, efficient performance, and long service life are provided by the "Joule Box" solar water heater at an attractive price of only \$1,000-\$4,000, according to this manufacturer. In domestic applications, savings up to 90 percent are possible on hot water, depending upon the intensity of available sunlight and the actual demand for hot water. The system includes: solar collector(s), tank, pumps, control piping, and fittings. All collectors feature completely copper waterways, tempered glass, stainless steel pressure plate, and a continuous molded seal surrounding the glass. Distributors, licensees, and agents are sought abroad.
WRITE: Jacob H. Paster, InterTechnology Solar Corporation, Dept. CN, 100 Main Street, Warrenton, Virginia 22186 U.S.A. (Photo)

MULTI-PURPOSE SOLAR HEATING EQUIPMENT -- This firm manufactures solar heating equipment applicable to a broad variety of commercial, industrial, and domestic uses. Primarily intended to produce hot water, the system can be used with other fluids as a primary heat exchanger. System components include a solar collector panel (circular or rectangular), a solid-state temperature-difference control, a pipe clamp thermistor designed for precision

measurement/control of temperatures; a circulating pump, and a universal mounting frame for the collector panel. Easy to install, the equipment is said to require little or no maintenance. The company is interested in obtaining overseas agents. WRITE: Les Botoff, Solar-Eye Products, Inc., Dept. CN, 1300 N.W. McNab Road, Building G & H, Fort Lauderdale, Florida 33309 U.S.A.



LOW-COST, VERSATILE EXTRUSIONS FOR SOLAR ENERGY SYSTEMS --One inexpensive "SolaRoll" extrusion, according to this firm, can do the work of three sets of normal metal extrusions: it secures and seals glazing materials, encloses the structural side-walls of an enclosure box, and acts as a flashing between the enclosure box and the roof/wall to which it is attached. Formulated from a flexible, synthetic elastomer (Ethylene-Propylene Diene Monomer), these uniquely shaped products can be used with an unlimited variety of custom-designed solar heating and lighting systems. Simple to ship, cut, and install, "SolaRoll" extrusions replace costly and cumbersome methods of glazing and enclosing solar collectors, greenhouses, skylights, storm windows, etc. They reportedly retain strength and appearance for years despite weathering, chemicals and abrasives, ultraviolet radiation, etc. Agents sought. WRITE: Albert Nunez, Jr., North American Solar Development Corporation, Dept. CN, P.O. Box 332, Stanardsville, Virginia 22973 U.S.A. (Photo)



SOLAR-POWERED ROOF DRAINAGE SYSTEM -- Using the rays of the sun as its sole source of energy, the "Solar Roof Drain" pump provides a low-cost, low-maintenance solution to the problem of drainage for flat-roofed and other buildings. Weighing only 20 lbs (9 kgs), the unit can pump up to 1/2 gal (1.9 l) of water per minute. The attractive unit operates through changes in air temperature and pressure which occur under its clear plastic dome. The resulting pressure vacuum siphons standing water through a discharge hose to the roof drains. The firm says that the system, which sells for \$200, replaces units priced at well over \$1,000. Agents are sought abroad. WRITE: N.L. Pyne, BFGoodrich Company, Dept. CN, 500 South Main Street, Akron, Ohio 44318 U.S.A. (Photo)

UNIT CONVERTS VARIABLE DC POWER TO AC POWER -- The "Gemini Synchronous Inverter" is said to be the only line-commutated synchronous inverter on the market. Interposed between a variable voltage DC power source (wind turbines, solar photovoltaic arrays, solar thermal electric systems, etc.) and an AC power source, the unit changes the DC current to AC power at standard line voltages and frequencies. The simple circuitry, according to the company, offers high reliability at the lowest cost per kilowatt of any DC-to-AC conditioning equipment. Any DC power not required by the load flows into the AC lines where it can be used by other consumers connected to the same system. If the DC power does not equal the load requirements, the AC lines supply the difference

in the conventional way. Price range is \$800-\$100,000. Agent inquiries are welcome. WRITE: Robert Couchman III, Windworks, Inc., Dept. CN, Route 3, P.O. Box 44A, Mukwonago, Wisconsin 53149 U.S.A.

INFLATABLE FLAT PLATE SOLAR COLLECTOR -- This firm is seeking agents and licensees for an inflatable, flat plate (air-type) solar collector useful for numerous space heating applications. The firm says the "Solar Pak" is inexpensive and very easy to install since no rigid frame is required. It can also be deflated for shipment or storage in small cartons or plastic bags. The collector is adaptable to both temporary and permanent installation. As a portable unit, for instance, it can provide fast, temporary heat for garages, construction buildings, on farms, etc. The units are reportedly as efficient as most air-type flat plate collectors available. Their life expectancy is three to five years. Constructed of lightweight plastic, the "Solar Pak" sells from \$100-\$500. WRITE: Terence Crombie, Chicago Solar Corporation, Dept. CN, 1773 California Street, Rolling Meadows, Illinois 60008 U.S.A.

HIGH EFFICIENCY SOLAR COLLECTORS -- According to this firm, an entirely new design and assembly makes its solar collectors the most efficient available in terms of actual BTU's (British Thermal Units) captured and converted. The unit's aluminum finned absorber works on the "heat entrapment" principle, providing an extensive and efficient collection surface. Thermal bonding is accomplished with liquid aluminum which enhances heat transfer and eliminates the chance of corrosion. The collector's quality construction assures a long service life and its lightweight, anodized aluminum frame is well adapted to field applications. Price range: \$170-\$300. The company is seeking distributors. WRITE: Gene Osborne, American Solar Industries, Dept. CN, P.O. Box 6810, Concord, California 94524 U.S.A.



SILICONE HEAT-TRANSFER LIQUID FOR SOLAR ENERGY SYSTEMS -- "Q2-1132" is a silicone heat-transfer liquid formulated to help solar energy systems reach new levels of reliability, safety, and economy under all weather conditions. Unlike alternative heat-

transfer mediums (water, water-glycol mixes, hydrocarbons, etc.), this liquid will not freeze or boil, does not degrade or become corrosive, offers a high flashpoint of 450 degrees F (232 degrees C), and pumps at temperatures as low as -50 degrees F (-46 degrees C). Most importantly, the firm says, it keeps its properties for years with no accumulation of tar or acid. Fluid replacement is virtually eliminated. Priced from \$2.50 to \$5 per lb (0.45 kg).
WRITE: R.H. Hoover, Dow Corning Corporation, Dept. CN, Box 1767, Midland, Michigan 48640 U.S.A.



VERSATILE SOLAR COLLECTOR FOR HIGH-TEMPERATURE APPLICATIONS --The "Model 3001 Concentrating Collector" is a reflecting parabolic trough solar collector designed to heat fluids to temperatures between 140 degrees F (60 degrees C) and 600 degrees F (316 degrees C). In this temperature range, the firm notes, it is highly cost-effective compared to flat-plate and other concentrating collectors now on the market. Typical applications include industrial process hot water and steam, space cooling, and organic Rankine cycle systems. The "Model 3001 Collector" is built with heavy-duty components, making it ideally suited for a wide range of industrial and commercial applications. The firm is willing to work with agents on a non-exclusive basis. Price: \$15.25/sq ft and up. WRITE: Edward L. Rossiter, Acurex Corporation, Dept. CN, 485 Clyde Avenue, Mountain View, California 94042 U.S.A. (Photo)

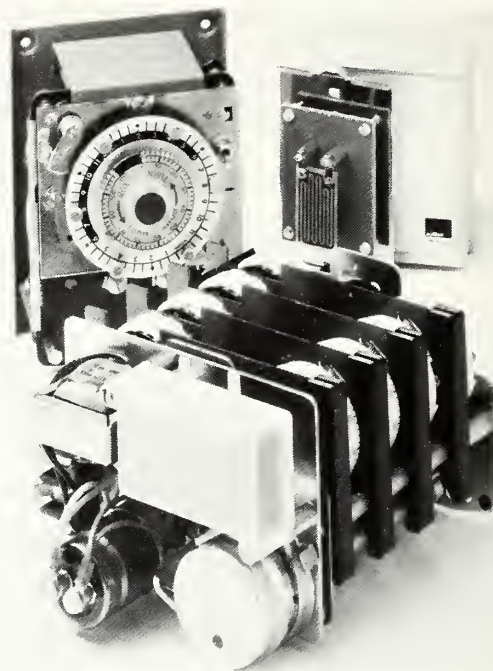
NEW SOLAR COLLECTOR COMBINES BEST FEATURES OF TWO MODELS -- The "Solergy Collector" is a unique solar collector design intended to provide the superior performance needed for efficient, broad scale application of solar energy. The unit combines the characteristics of a higher temperature focusing collector and the simplicity of a fixed flat plate configuration. Because the collectors can produce higher temperatures (93-124 degrees C -- 199-255 degrees F), their output can be used, the company notes, with absorption chillers or other solar-powered cooling devices. Typically used for commercial/industrial heating and cooling, food processing, heating water supplies and public swimming pools, etc. Price is \$250/unit in quantities of 40 or more. Agent inquiries invited. WRITE: James T. McLaughlin, Solergy Inc., Dept. CN, 70 Zoe Street, San Francisco, California 94107 U.S.A.



SOLAR ABSORBER PLATE FOR HEATING SYSTEMS -- The "Terra-Light" absorber plate is offered to manufacturers and installers of hot water/space heating systems who will find it an excellent foundation for a reliable, cost-effective flat plate solar collector when combined with the necessary components (covers, insulation, box gaskets, and piping). The firm reports that the plates are made of copper which offers superior thermal conductivity as compared to all other materials currently used in absorber plate construction. Resistant to corrosion and weathering, the copper plates are also compatible with all-copper plumbing systems. These lightweight products are priced from \$39 to \$78. WRITE: James Hebenstreit, Terra-Light, Inc., Dept. CN, 128 Spring Street, Lexington, Massachusetts 02173 U.S.A. (Photo)

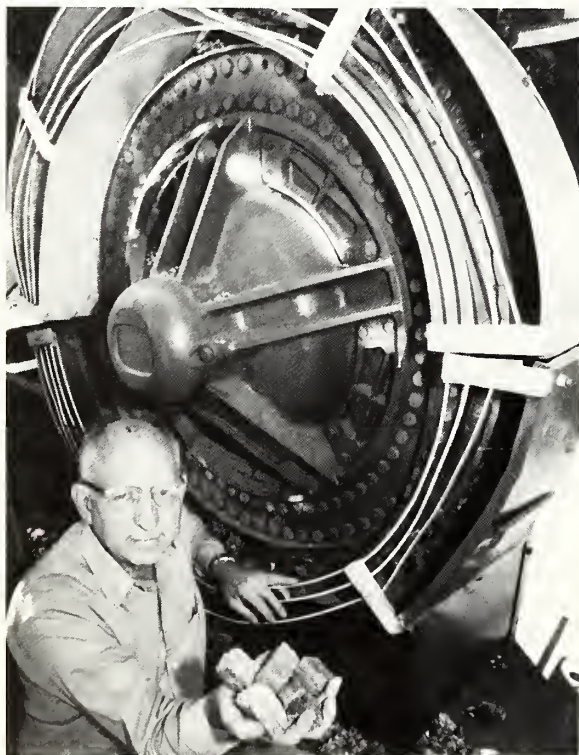
ENERGY: Electric and Other (Machinery & Equipment for Production and Distribution)

SUPERMARKET DEFROSTING UNIT WORKS ONLY WHEN NEEDED -- Supermarket display cases which were formerly defrosted at regular intervals (whether they needed it or not) can be set to defrost according to the humidity conditions in the store. The "EC-200 Demand Defrost Control System" works much like conventional defrosting mechanisms but it constantly monitors humidity, the major cause of frost build-up. Defrosting is automatically adjusted to meet store conditions. A mechanically-controlled safety feature assures re-initiation of the freeze cycle if defrosting exceeds a predetermined time limit. Suggested for supermarkets and other users of commercial refrigeration equipment. Priced from \$300 to \$400. Agents are wanted. WRITE: Kathleen Neumeyer, AMF Paragon Electric Company, Dept. CN, 606 Parkway Boulevard, P.O. Box 28, Two Rivers, Wisconsin 54241 U.S.A.

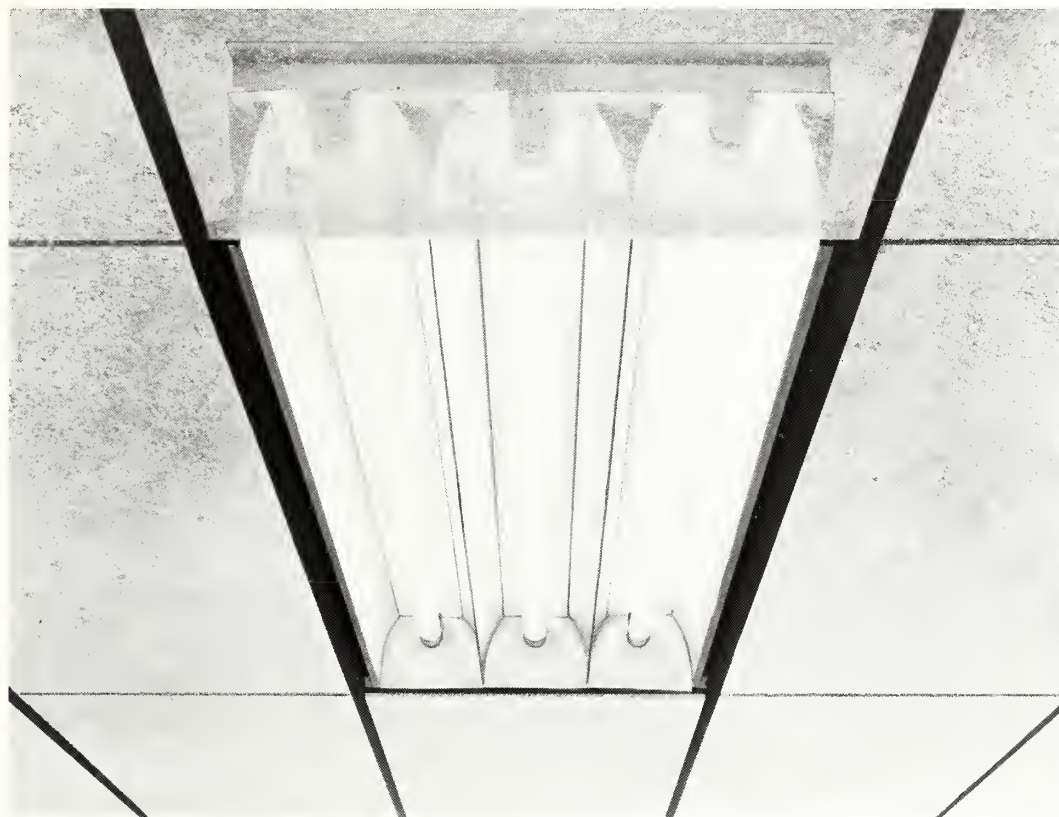


SYSTEM MAKES LOW-COST COAL SUBSTITUTE FROM WASTE MATERIALS --

The "Energy Cube Densifying System" (ECDS) converts shredded waste materials into "Energy Cubes," an inexpensive coal substitute which the company says can substantially reduce energy costs for small and medium-sized industrial firms. Able to convert industrial or agricultural wastes into solid fuel at 5-10 tons/hour (4.5 - 9.0 t), the "ECDS" is said to produce "Energy Cubes" for one-third to one-sixth the cost of buying comparable supplies of coal. The cubes can be made from mixed paper, plastic, municipal waste, straw, bagasse, sawdust, etc. The "ECDS" also has great potential for producing easily handled animal feeds from agricultural wastes and nutritive additives. Price is \$85,000-\$100,000. Agents wanted. WRITE: Gerald Nelson, PAKAKUBE Corporation, Energy Cube Division, Dept. CN, 931 East Harbor Drive, San Diego, California 92101 U.S.A.



EMERGENCY POWER SOURCE FOR ELECTRONIC EQUIPMENT -- These "Stand-by Power Systems" are engineered to provide emergency power for sensitive electronic equipment during unexpected power failures. The units automatically provide AC sine-wave power of 50 or 60Hz for as long as 1 1/2 hours or until normal power is restored. The systems are mounted in cabinets of heavy-gage sheet metal which are equipped with front-opening, key-locked doors. Designed to occupy floor or wall positions, each cabinet contains batteries, a DC-to-AC inverter, and a battery charger which automatically recharges the system when normal power is resumed. Typically used for powering computers, electronic cash registers, telephones, alarm systems, etc., the units sell from \$275 to \$10,000 each. Agents sought. WRITE: John W. Moore, Computer Power, Inc., Dept. CN, 124 West Main Street, High Bridge, New Jersey 08829 U.S.A.

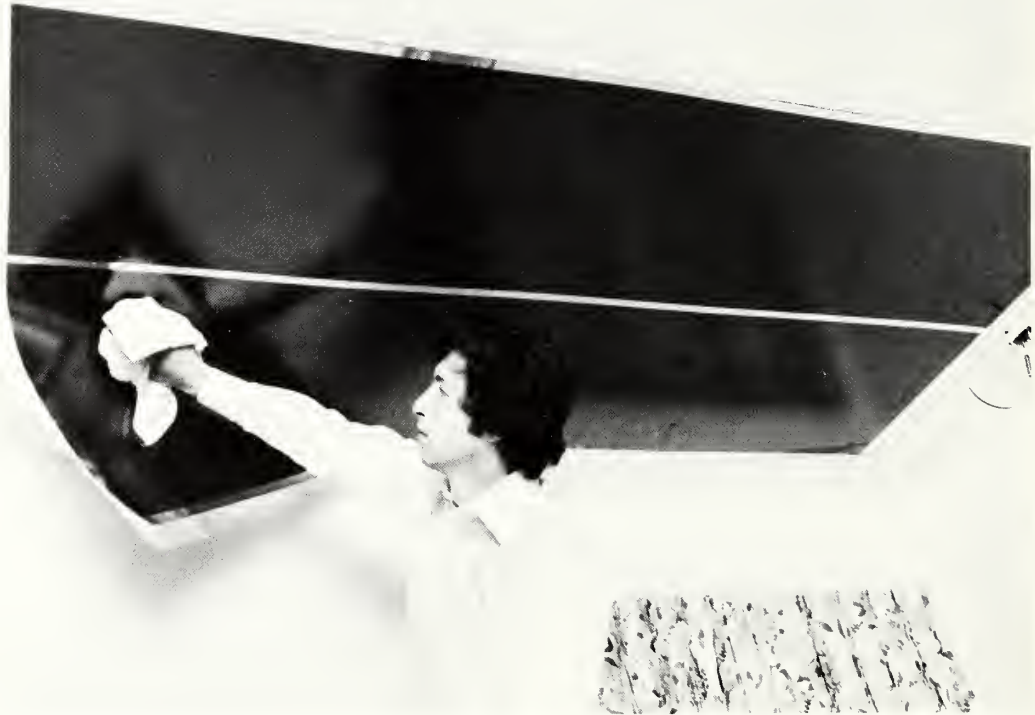


X-Parabolic luminaire with end plate removed as seen through ceiling tile.

PARABOLIC DESIGN IMPROVES LIGHT FIXTURE'S EFFICIENCY -- The "X-Parabolic" is a new fluorescent lighting fixture which features 86.3 percent efficiency (40 percent higher, according to the firm, than that of the best selling alternatives.) It provides very wide light distribution, maintaining illumination levels of 70 foot candles at 1.4 to 1.8 watts per sq ft (.09 sq m). Since the "X-Parabolic" has fewer dust-collecting surfaces than lensed or baffled fixtures, 66 percent less maintenance is needed. This attractive fixture, available in a number of convenient sizes, will match the lighting standards of conventional fixtures with

only half the wattage. Sold for \$70. Agent inquiries are invited. WRITE: Robert W. Zarosi, Lighting Products Inc., Dept. CN, 1549 West Park Avenue, P.O. Box 370, Highland Park, Illinois 60035 U.S.A. (Photo)

INNOVATIVE, NEW DEVICE LOWERS ENERGY USED BY FLUORESCENT LAMPS -- Similar in design and appearance to a fluorescent lamp, the "Pow-R-Shunt" reportedly lowers power consumption by more than 40 percent in fluorescent light fixtures that use more than one lamp. It is engineered to replace individual fluorescent tubes in multiple fixtures without reducing the power flow (and lighting characteristics) of the other lamps, as usually occurs when one lamp is simply removed. Since it is engineered to fit existing lamp holders, installing the "Pow-R-Shunt" is as simple as changing fluorescent tubes. Price range is approximately \$6-\$17. The company is interested in obtaining foreign distributors and licensees. WRITE: Bob Abernethy, Enersave Inc., Dept. CN, P.O. Box 36043, Strongsville, Ohio 44136 U.S.A.



NEW RADIANT HEATING SYSTEM -- According to the manufacturer, the new "ENERGY KOTE" radiant heating panels provide energy savings of 30-60 percent over other commercially available radiant, electrical, and fossil fuel systems. Primary energy savings are due to the unit's high efficiency, exceptional zone control features, and the low cost of installation and maintenance. The "ENERGY KOTE" converts electrical energy to safe, clean radiant energy at a 95 percent efficiency level. It also features quick

response time, reaching full operating temperatures of 55-60 degrees C (131-140 degrees F) within two minutes of being activated. Simple to install and maintain, the panel sells from \$50-\$130. Suggested for space heating in any residential, commercial, or industrial location. Overseas agents are sought. WRITE: Duane W. Buckingham, Thermal International, Ltd., Dept. CN, 2531 P Street, N.W., Washington, D.C. 20007 U.S.A. (Photo)

BURNER UNIT IMPROVES COMBUSTION, LOWERS POLLUTION -- This "APR Burner" incorporates a venturi-style axial flow construction which is said to assure extremely efficient combustion while lowering particulate emissions that contribute to pollution. The burner is available in a number of sizes, capable of burning 700-7,000 kilograms of fuel per hour. The manufacturer guarantees operation with no more than .6 percent excess oxygen. Recommended for utilities and large industrial plants which operate boilers with a minimum capacity of 30,000 lbs (13,500 kgs) of steam per hour, the "APR Burner" sells from \$5,000 to \$500,000. WRITE: Arthur J. Jackson, Peabody Engineering Corporation, Dept. CN, 835 Hope Street, Stamford, Connecticut 06907 U.S.A.

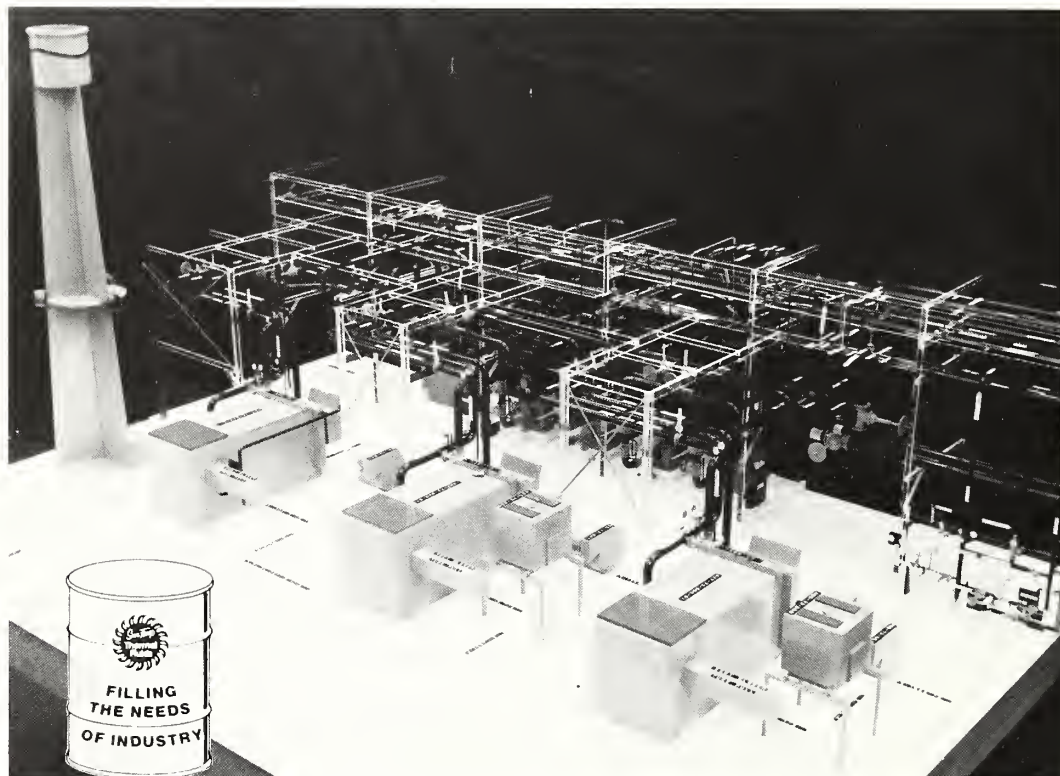
ELECTRONIC COMPONENTS

HIGH VOLTAGE ENERGY STORAGE CAPACITORS -- Suggested for research labs, universities, and manufacturers of lasers, radar transmitters, and television transmitters, the Series ES capacitors are designed for fusion power research, lasers, and pulse discharge applications. They incorporate an innovative dielectric system of film, paper, and non-flammable, non-PCB (polychlorinated biphenyl) oil. An improved wide temperature range (-35/+70 degrees C — -31/+158 degrees F) and a low ESR dissipation factor (under .0015) permit operation of the capacitors at up to 100 pulses per second. Twenty percent lighter than previous models, the ES Series sells from \$250 to \$750. Agent inquiries welcome. WRITE: Bruce Hayworth, Capacitor Specialists, Inc., Dept. CN, P.O. Box 2052, Escondido, California 92025 U.S.A.

GENERAL INDUSTRIAL MACHINERY AND EQUIPMENT **(Including Process Controls)**

FUEL OIL ADDITIVE IMPROVES COMBUSTION, LOWERS POLLUTION -- The manufacturer states that "Technol T" fuel oil conditioner can improve the combustion performance of fuels in three essential ways: 1) it produces a finer blending of oil and oxygen, which results in faster, more complete combustion and greater generation of heat per unit of fuel; 2) it dissolves accumulations of sludge, carbon, and water that lower operational efficiency and increase the need for maintenance; 3) it significantly reduces the production of SO₂, SO₃, sulphuric acid and other pollutants.

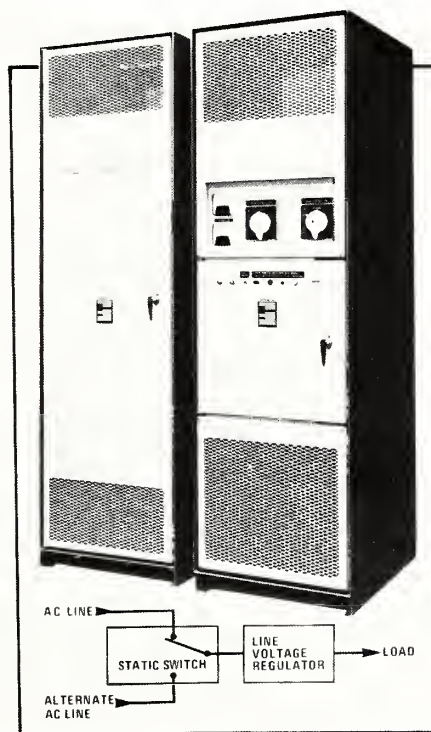
The firm recommends "Technol T" for a number of end-users including paper mills, glass mills, foundries, steel mills, and other industrial users; airlines and other users of jet fuels; and housing complexes or other building groups with large heating capacities. Agents are sought for this product which sells for \$7.20/gal (3.8 l). WRITE: Howard Borman, Continental Fuel Economy Corporation, Dept. CN, 150 East 35 Street, GDN No. 1, New York, New York 10016 U.S.A.



EFFECTIVE, NON-TOXIC HEAT TRANSFER FLUID -- "Sun-Temp Alpha" is a non-toxic, non-corrosive, low-pressure heat transfer fluid for use in liquid phase heating and cooling systems. Its vapor pressure is below atmospheric pressure throughout its 0-600 degrees F (-17.8 to 321 degrees C) use range. The firm says its heat transfer characteristics compare well with those of toxic high-temperature organic fluids, yet "Sun-Temp Alpha" is non-toxic, has a primary skin irritation index of 0.0, and produced no eye irritation in tests on rabbits. The product is formulated to enhance worker safety in "hot oil" applications and is especially recommended for processors of food, drugs, cosmetics, tobacco, and agricultural products. Agents are wanted. Price: \$7-\$10/gal (3.8 l). WRITE: E.H. Mordt, Multitherm Corporation, Dept. CN, Front and Walnut Street, Darby, Pennsylvania 19023 U.S.A. (Photo)

ELECTRIFIED RADIANT TUBE FOR INDUSTRIAL HEAT PROCESSES -- An extremely versatile approach to commercial and industrial heat treating operations is supplied by the "Electrified Radiant Tube (ERT)" which operates both with fossil fuels and with electricity. A simple switch instantly converts the "ERT" to electrical power during periods (winter, for instance) when gas or other fuels are scarce. Later, reconversion to less expensive fossil fuels is quickly accomplished by operating a selector switch, opening valves, and lighting the necessary pilot flames. Conversion time is kept to a minimum and the heat output in both modes is about the same. Primary applications are in operations that require isolation of flue products from a protected atmosphere, as in carburizing, bright annealing, sintering, brazing, and hardening. WRITE: Thomas T. Phipps, Surface Division, Midland-Ross Corporation, Dept. CN, 2375 Dorr Street, Toledo, Ohio 43691 U.S.A.

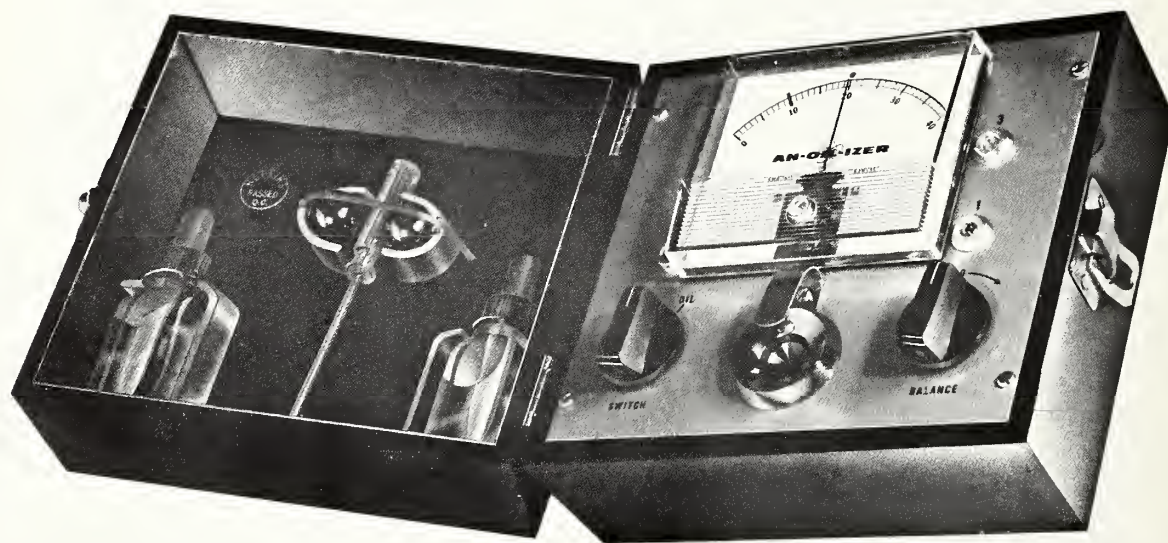
UNIQUE ALTERNATIVE TO UNINTERRUPTIBLE POWER SYSTEMS -- According to the firm, the new "Ultimate" system provides the continuous, conditioned power capability of a static UPS (Uninterruptible Power System) at a fraction of the cost and with higher efficiency. It can be used wherever two separate commercial power lines are available, as in cities or at many industrial sites. The system uses a solid-state, sub-cycle transfer switch in conjunction with a line voltage regulator. In the event of a power failure in either power line, the switch transfers the load to the other line in less than four milliseconds without effect upon even the most sensitive instruments, controls, or computers. Potential end-users are: EDP Computer installations, chemical and petroleum plants, and electric utilities. Sold from \$2,000 to \$50,000. WRITE: D.C. Griffith, Cyberex, Inc., Dept. CN, 7171 Industrial Park Boulevard, Mentor, Ohio 44060 U.S.A.



ENVIRONMENTALLY SAFE INDUSTRIAL AIR HEATER -- Using the principle of fluidized bed combustion (FBC), this industrial air heating system provides clean, high-temperature air (up to 1000 degrees F or 538 degrees C) for drying, oven applications, and other process industry uses. It is said to burn all kinds of coal (including high ash or high sulphur types), as well as waste fuels,

without exceeding environmentally safe limits for emissions of sulphur dioxide and nitrogen/oxygen compounds. Suggested for drying paper, food, paint, gypsum board, etc. Price range is \$200,000-\$900,000. WRITE: Robert E. Sirany, FluidDyne Engineering Corporation, Dept. CN, 5900 Olson Memorial Highway, Minneapolis, Minnesota 55422 U.S.A.

PORTABLE UNIT TESTS FOR CONTAMINATED MOTOR OIL -- A highly accurate and durable electronic instrument, the "Hoppy An-Oil-Izer" detects contaminants (carbon, fine metals, water, etc.) in oil by measuring the oil's ability to conduct an alternating current. This compact, portable unit is said to be excellent as a field tester for any engine which uses oil as a lubricant. Battery operated, it can show when oil changes are needed (or when they are unnecessary) and also help to detect engine malfunctions before they occur. Costly oil changes and engine repairs are sharply reduced, lowering associated maintenance costs by up to 33 percent. Sells for \$250. Suggested for firms which use lubricating oil in motor vehicles, marine vessels, locomotives, or heavy industrial engines. The firm seeks distributors who currently service such industries. WRITE: Robert M. Lawn, Energy Systems, Inc., Dept. CN, 2105 Park Avenue, Suite 17, Orange Park, Florida 32073 U.S.A. (Photo)



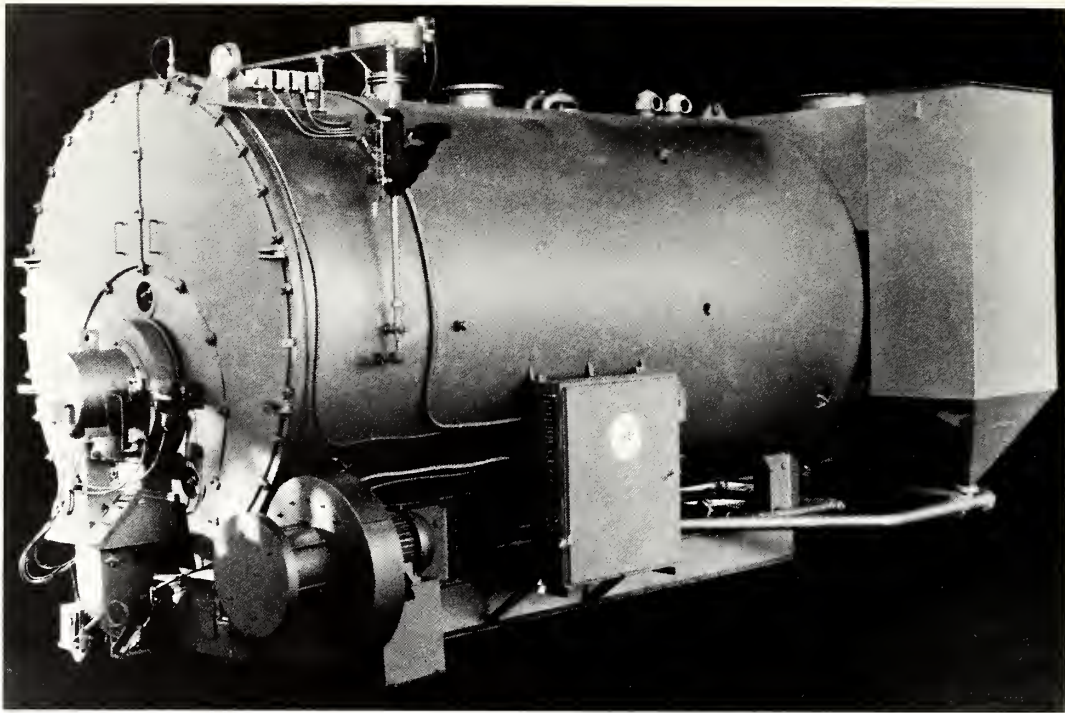
ADDITIVE IMPROVES COMBUSTION, CONTROLS SULPHUR EMISSIONS -- "Trimex" is a natural catalyst which, according to the manufacturer, can reduce sulphur dioxide emissions in combustion processes by up to 80 percent. "Trimex" also increases the number of BTU's (British Thermal Units) produced by making combustion of fuels more complete. The company notes that it reduces requirements for expensive particulate collectors and can help

lower the concentration of toxic by-products in exhaust gases. The amount of additive used will depend upon the amount of sulphur in the fuel being burned and the degree of reduction desired for SO₂ emissions. Suggested for utilities, manufacturing firms, government installations, coal and oil producers, volume users of coal and oil. Sells for \$450/ton (.9 t). Inquiries from potential distributors are sought. WRITE: G.H. Starke, Jr., Trimex Corporation, Dept. CN, P.O. Box 6087, Washington, D.C. 20005 U.S.A.

NON-CONTACT THERMOMETER DETECTS FAULTY STEAM TRAPS -- The "View-Temp 2200" is a portable thermometer designed for industrial tasks such as locating faulty steam traps. The firm says that regular surveillance of steam traps is a maintenance necessity since the cost of steam is higher than \$3 per 1,000 lbs (450 kgs) in some areas. Thus, each faulty trap detected by the "ViewTemp 2200" can save four or five times the cost of buying the instrument. This portable radiometer can measure temperatures of otherwise inaccessible objects since its non-contact operation works at a distance. It offers an automatic null balance design that needs no calibration or preadjustment and it also features simultaneous viewing of the "target" and the digital temperature display. Suggested for chemical plants, paper and textile mills, etc. Priced at \$1,700. Agents are sought. WRITE: Charles F. Langenhagen, Williamson Corporation, Dept. CN, 1152 Main Street, Concord, Massachusetts 01742 U.S.A.



FUEL-SAVING HOT PRESSURE WASHER -- The "Model 390 Hot Pressure Washer" is recommended by the manufacturer for gas stations, garages, boat yards, construction sites, and other areas where an economical system is needed for washing, degreasing, and sterilizing tasks. The unit discharges a controlled water volume of 120 gal/hour (456 l) at 500 lbs/sq in (34.6 kg/sq cm). According to the firm, the "Model 390" uses less fuel and chemicals than alternative systems and, simple to operate, can be handled with minimal labor and cost. The company is seeking experienced, well established agents and distributors for this product. WRITE: Christian F. Luginbuhl, Chris Systems, Dept. CN, 39 Ludwig Road, Ellington, Connecticut 06029 U.S.A.



SOLID-FUEL BOILER BURNS SOLID WASTES -- This solid-fuel packaged boiler is said to produce low or high-pressure steam or hot water by burning any cellulosic waste material (sawdust, wood shavings, rice hulls, nut shells, etc.) with an average moisture content up to 20 percent. Fuel particles not completely consumed are trapped and recycled through the furnace chamber. This continuous recycling contributes to the unit's high (80 percent) efficiency rating and produces the effect of a much larger burning chamber. This compact, automatic unit can, therefore, compete with much bulkier units. Packaged boilers are available in the 100-500 horsepower range, priced to \$200,000. End-users include: lumber mills, furniture manufacturers, industrial producers with solid wastes, etc. Agents sought. WRITE: R.W. Winskill, Ray Burner Company, Dept. CN, 1301 San Jose Avenue, San Francisco, California 94112 U.S.A. (Photo)

LOW-COST FURNACE-PRESSURE CONTROLLER SAVES FUEL -- "EPIC" (Electronic Pressure Indicating Controller) is a stable, highly sensitive, differential-pressure controller that accurately maintains industrial furnace pressures at the desired level to lower energy consumption, improve furnace life, and increase product uniformity. EPIC's sensor detects differential pressures from -1.27 to +3.81 mm of water (-0.0124 to +0.0373 kPa). Its output, through a pair of solid-state relays that operate as a bi-directional motor controller, can drive motor starters, relays, solenoid valves, or electro/hydraulic valves. Inexpensive to install and maintain, the unit sells from \$945 to \$1,855. WRITE: Richard J. Reed, North American Manufacturing Company, Dept. CN, 4455 East 71st Street, Cleveland, Ohio 44105 U.S.A.

ELECTRIC SPEED GOVERNOR IMPROVES ENGINE EFFICIENCY -- An entirely electric unit with only one moving part, this "Electric Speed Governor" is said to provide a precise control of engine speeds not possible with mechanical or hydraulic governors. Its exceptionally fast response time helps the governor to maintain engine speeds (for both diesel and carburetted engines) to within .25 percent under varying load conditions. Applicable to a wide variety of engines (up to 300 HP), the "Electric Speed Governor" is recommended for applications associated with hospitals, computer operations, off-shore oil and gas drill rigs, communication vans (including mobile television vans), ships, and ground operations aiding air traffic navigation. Agent inquiries are welcome. WRITE: D.V. Stratton, Jr., American Bosch, Marketing Division, Dept. CN, 3664 Main Street, Springfield, Massachusetts 01107 U.S.A.

VINYL STRIPS CREATE "DRIVE-THROUGH", HEAT-RETAINING DOORWAY --

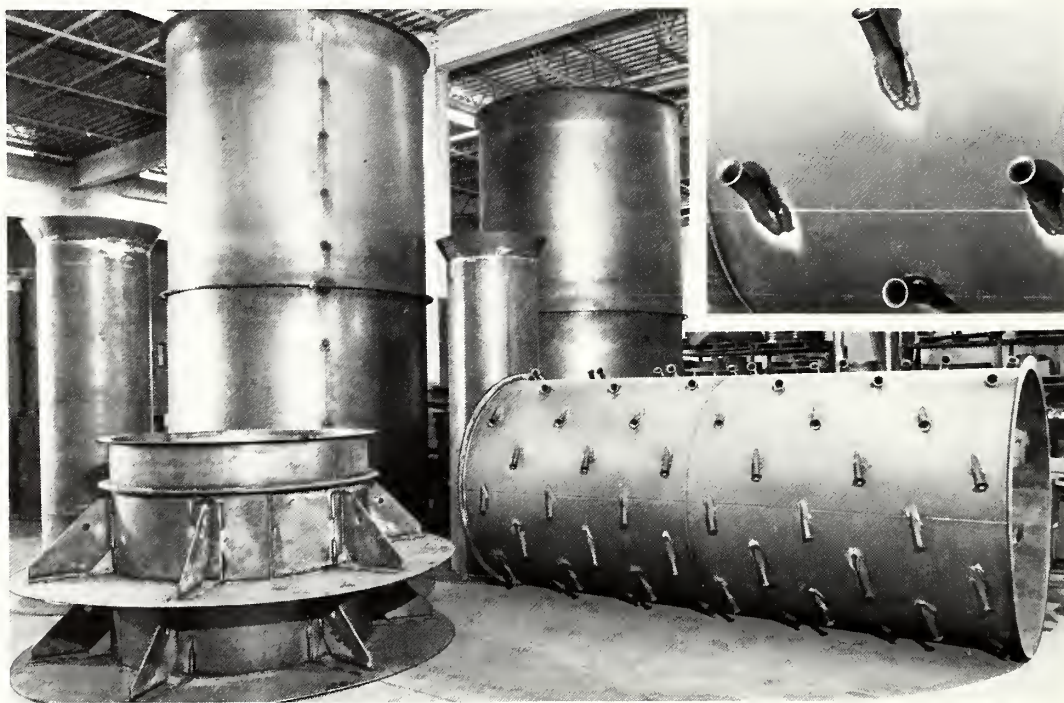
While presenting no obstacle to movement of equipment or personnel, the flexible "Flextrip Door" creates an effective "thermal barrier" that maintains indoor heating and air conditioning at industrial sites. Each about one ft wide (.3 m), the door's vinyl strips are suspended from an open doorway where there is a steady flow of work traffic. Personnel or vehicles (forktrucks, etc.) can move through the curtain without stopping; the strips close behind to prevent loss of temperature control. Designed for easy installation and long life, the "Flextrip Door" is entirely transparent for safety. Priced from \$5.50 to \$7.50/sq ft (.09 sq m). Made to the buyer's specifications. WRITE: Stephen A. Grove, MetalGlas Products, Inc., Dept. CN, 3400 Oakcliff Road, Atlanta, Georgia 30340 U.S.A.



HIGH EFFICIENCY ELECTRIC MOTORS -- This firm has recently developed high-efficiency electric motors for new applications: chemical processing, pollution control, mining, oil field pumping, etc. The firm says the motors offer substantial savings in energy and power cost, on occasions returning the purchase price within 12 months. The redesigned motors in 25-75HP frame sizes have an efficiency rating of 92-93 percent, exceeding the ratings typical of most industrial motors. All motors above 3HP exceed efficiency

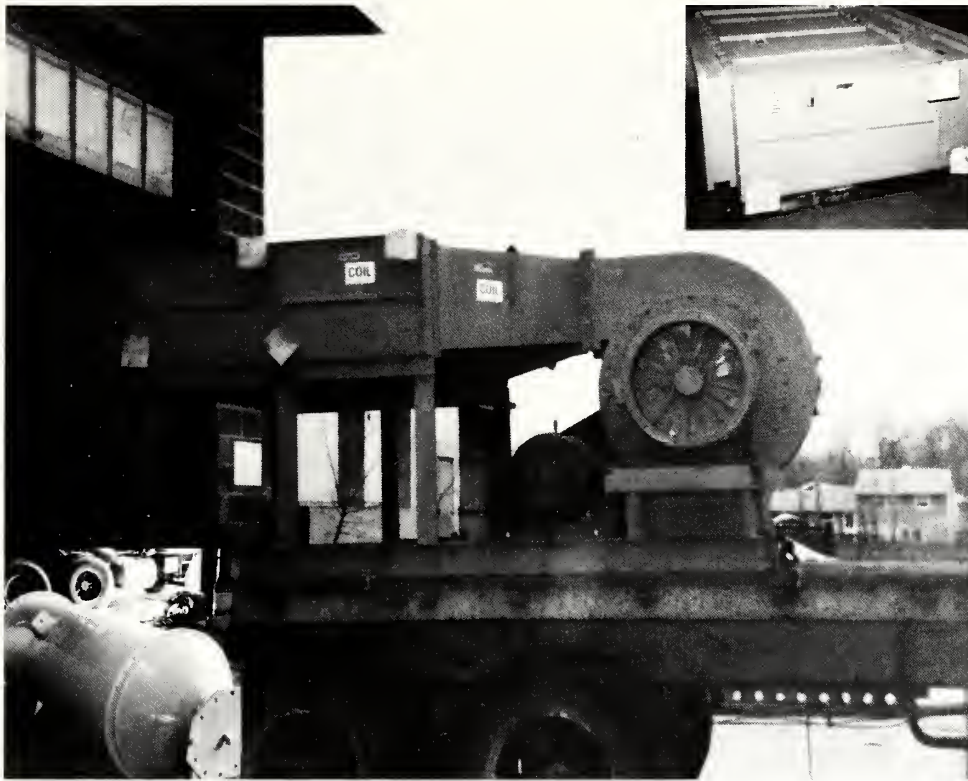
rates of 85 percent. These units are priced from \$100 to \$9,000. The firm is seeking overseas agents. WRITE: Ronald Clarke, Baldor Electric Company, Dept. CN, P.O. Box 2400, Fort Smith, Arkansas 72902 U.S.A.

NEW INDUSTRIAL DRYER USES LESS ENERGY -- An innovative industrial dryer has been developed which, according to the company, uses less energy than conventional dryers now available. The "Enton Dryer" is engineered to dry, preheat, or cool such materials as gypsum, coal, food products, ores, or fine granular chemicals with maximum heat-exchange efficiency. This special energy-saving design assures that products are always subjected to uniform, high temperatures. The dryer can also be effectively used for calcination or oxidation of chemicals or minerals and, since there are no moving parts, maintenance requirements are low. Price range is \$3,000-\$500,000. WRITE: Mack Gordon, Aerodyne Development Corporation, Dept. CN, 29085 Solon Road, Cleveland, Ohio 44139 U.S.A. (Photo)



NEWLY DESIGNED PNEUMATIC CYLINDER USES SAME AIR PRESSURE TWICE -- Most multi-piston, pneumatic cylinders need two shots of air to extend and retract a piston rod, but this industrial cylinder uses one shot of air pressure for both jobs. Energy used to extend the cylinder rod is stored and used again to power its retraction; this permits the cylinder to operate on 50 percent less compressed air than conventional units. The inventor is seeking licensees worldwide for this uniquely designed product. Major end-users are industries using power cylinders for tasks such as punching, piercing, clamping, etc. WRITE: R.S. Pauliukonis, Patentrol Corporation, Dept. CN, 6660 Greenbriar Drive, Cleveland, Ohio 44130 U.S.A.

HEAT REDISTRIBUTION/WASTE HEAT RECOVERY SYSTEMS



INNOVATIVE AIR PREHEATING SYSTEM FOR COMBUSTION PROCESSES --

Used with combustion equipment such as steam boilers, ovens, furnaces, thermal liquid heaters, etc., the "Syncromizer" is said to provide an efficient means of preheating air prior to the combustion process. Heat from waste gases is captured and transmitted (by thermal liquids) to incoming air. Awkward ductwork is replaced by convenient liquid pipes and the system's flexible design permits an effective, efficient equipment room layout. The "Cold End" of the unit (the end from which cooled waste gases exit) is made of stainless steel to reduce corrosion from condensing chemicals. In addition, an automatic temperature control system (complete with malfunction alarm) allows the user to control or eliminate condensation of corrosive chemicals regardless of the firing rate or type of fuel used. Sells near \$15,000. Agents wanted. WRITE: H. Nelson Jacobs, Coil Company, Dept. CN, 125 South Front Street, Colwyn, Pennsylvania 19023 U.S.A.

HEAT EXCHANGER UNIT FOR GAS-TO-GAS HEAT TRANSFER -- The "GGF-D" is a stationary plate heat exchanger designed to transfer heat between two streams of gas. It works on the principle of counter-flow which operates without allowing contact between the gas streams. Because the "GGF-D" is a completely modular system, a

unit can be built from the basic standardized components which meets specific requirements (gas flow rate, temperatures, pressures, humidity, chemical composition, etc.) exactly and without the additional costs usual with custom designed systems. The unit typically requires less space than tubular or similar systems, the firm explains, and can be designed to meet almost any flow and pressure drop requirements. End-users: food process industry, chemical industry, power plants, metallurgical processors, etc. WRITE: R.A. Slenes, General Resource Corporation, Dept. CN, 201 South Third Street, Hopkins, Minnesota 55343 U.S.A.

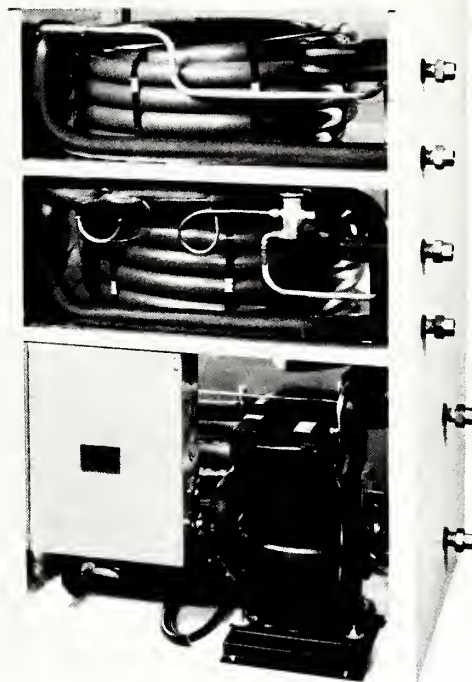
NEW HEAT RECOVERY UNITS FOR AIR EXHAUST SYSTEMS -- The "Z-Duct" was designed to function economically in transferring heat energy from one air stream to another without allowing the streams to come into contact with each other. Thus, heat from exhausts can be used to warm fresh, incoming air without danger of contamination. This compact energy-recovery unit consists of a basic counterflow heat exchanger fitted into a duct in such a way as to divide it into separate though intermeshed passages. The heat transfer surface is folded and framed for maximum heat transmission. The unit makes possible marked fuel savings, according to the firm. Recommended for industrial firms, schools, restaurants, etc. Priced from \$500 to \$50,000. Agent inquiries welcome. WRITE: Dr. Nicholas DesChamps, DesChamps Laboratories, Inc., Dept. CN, P.O. Box 348, East Hanover, New Jersey 07936 U.S.A.

EFFICIENT NEW SYSTEM FOR RECOVERING INDUSTRIAL WASTE HEAT -- The "HeatBank" consists of passive heat exchangers designed for highly efficient recovery of waste heat in industrial applications. Operating between a warm air exhaust stream and cooler incoming air, each "HeatBank" combines up to several hundred heat pipes with extended area fins. The pipes contain small amounts of vaporizable fluid which acts as a medium for heat transmission. Vaporization and condensation create a cycle that moves heat from the warm end of the pipe to the cool end. Together, the pipes establish a "thermal path" which conducts large quantities of heat between the outgoing and incoming air streams. The system uses no moving parts or external power source. Price range: \$2,000-\$50,000. WRITE: R.B. Dickinson, Torin Corporation, Dept. CN, Kennedy Drive, Torrington, Connecticut 06790 U.S.A.

WASTE HEAT RECOVERY SYSTEM REPAYS INVESTMENT IN TWO YEARS -- According to this firm, waste heat from industrial exhaust gases can be successfully and continuously recovered with the "Boiler Economizer." This spiral-finned tube heat exchanger immediately reduces fuel costs, reportedly repaying the cost of its purchase in only two years. The unit is said to be easy and efficient to install, operate, and maintain. Its features include corrosion-

resistant stainless steel baffles and brackets; a simplified heat recovery method; free thermal expansion with a two-piece coil support bracket; etc. Sells for \$20,000. Agents are sought abroad. WRITE: E.V. Beltran, Beltran Associates, Inc., Dept. CN, 1133 East 35th Street, Brooklyn, New York 11210 U.S.A.

HIGH EFFICIENCY HEAT PUMPS -- This company offers heat pumps (both water-to-water and water-to-air) which reportedly provide the highest efficiency and performance of any available units. Wherever a source of moderate temperature water (40-90 degrees F/4.5-32 degrees C) is accessible, they can provide energy-saving features not found in conventional heating/cooling systems. Designed simply to redistribute heat for more effective use, the pumps are more efficient than devices that create "new" heat. The pumps are completely packaged, factory-charged units, pre-wired and factory-tested, with a pipe union connection intended to make installation simple. Quality construction, the firm says, makes these products ideal for builders, architects, mechanical engineers, and for use in the solar power industry and heating/air conditioning industry. Retails from \$2,400 to \$3,600. The firm seeks agents and distributors. WRITE: Dr. J. Paul Hurley, Vanguard Energy Systems, Dept. CN, 9133 Chesapeake Drive, San Diego, California 92123 U.S.A.



UNIT USES HEAT FROM LAUNDRY DRYERS TO PROVIDE HOT WATER FOR WASHING -- Coin laundries and other facilities (hotels, hospitals, military bases, etc.) that use commercial laundry dryers will be interested in this "Energy Recovery Grid" (ERG), a system for capturing the energy lost by dryers and using it to supply hot water for washing. The "ERG" consists of a high-efficiency heat exchanger and a complete manifold system for installation. Its unique tubular heat exchanger assures maximum heat recovery, while a special high-temperature silicone coating offers efficient performance and long operating life. "ERG" installations are said to have achieved cost savings of 60-80 percent on hot water consumption. Sells for \$75-\$90. Foreign distributors are wanted. WRITE: Barry Friedman, Enerdyn International, Inc., Dept. CN, 9229 LBJ Freeway, Dallas, Texas 75243 U.S.A.

NEW UNITS TAP COOLING SYSTEMS FOR HEAT AND HOT WATER -- This firm is seeking agents for two products that reclaim heat generated by central air conditioning and use it for space heating and hot water supplies. The "Econ-O-Pass" is designed for fractional and small horsepower equipment with multi-circuit heat exchangers. The "Econ-O-Pack" works with large refrigeration systems of 10 to 150 horsepower. (Larger "Econ-O-Packs" are custom-designed, offering high performance and trouble-free operation.) The units quickly pay for themselves, the manufacturer explains, by capturing wasted energy and are less costly than conventional systems. The "Econ-O-Pass" sells from \$390 to \$900, the "Econo-O-Pack" from \$550 to \$4,000. Both models are suggested for supermarkets, dairy farms, restaurants, private residences, etc. WRITE: Frank Fitzgerald, Sun-Econ, Inc., Dept. CN, Northway 10, Ushers Road, Ballston Lake, New York 12019 U.S.A.

HEALTHCARE INDUSTRIES



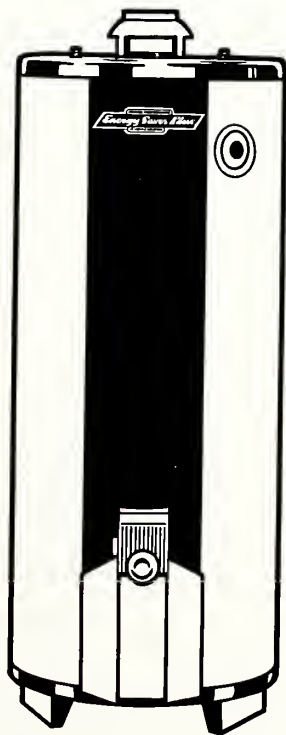
MEAL-TRANSPORT SYSTEM FOR HOSPITALS SOLVES HOT/COLD FOOD PROBLEM -- The "Sweetheart Serving System" is an energy-efficient system for delivering meals to hospital patients and nursing home residents. The firm says the system guarantees that every patient receives meals with each dish hot or cold as intended. Maintaining the correct temperature for each dish prevents nutritional loss and bacterial growth. This self-contained system consists of a transport vehicle (motorized or manual) and specially designed

washable serving trays with integral, fully encased heaters. The heaters are operated by a rechargeable power supply carried in the transport vehicle. The company states that proper food temperatures are maintained for prolonged periods without overcooking or drying of foods. Reduces waste and labor. Cost: \$5,000/unit. Agents sought abroad. WRITE: Ralph Cuccuro, Sweetheart Plastics, Inc., Dept. CN, One Burlington Avenue, Wilmington, Massachusetts 01887 U.S.A. (Photo)

HOUSEWARES

(Including furniture, fixtures, and appliances)

AUTOMATIC CONTROL SYSTEM FOR HOME UTILITIES -- This firm's "Utility Control System" is said to save a minimum of 20 percent on ordinary energy consumption in the home. It accomplishes this by maintaining regulatory cycles for utilities and appliances which operate on electricity, gas, or fuel oil. Simple to program and install, using only low voltage, models are adaptable for use in the field or for commercial, industrial, or residential applications. Signal lights, indicating each circuits mode of operation (on or off cycle), and manual overrides are included. Agents are sought for this system which sells from \$250 to \$450. WRITE: Fred L. Hurban, Newtronics Corporation, Dept. CN, 1940 Southwest Boulevard, P.O. Box 2313, Vineland, New Jersey 08360 U.S.A.



HEAT LOSS MINIMIZED WITH NEW GAS WATER HEATER -- Intended for residential use, the "Energy Saver Plus" gas water heater reduces heat loss by using substantially greater and more efficient insulation than previous comparable models. In addition, the gas pilot is designed to consume less gas though still providing sufficient heat to help maintain water temperature between main burner cycles. Available in 30, 40, and 50 gal (113, 151, 189 l) sizes, the heaters are priced at about \$90. Agents and distributors are sought. WRITE: Walter L. Abt, Mor-Flo Industries, Inc., Dept. CN, 18450 South Miles Road, Cleveland, Ohio 44128 U.S.A.

ELECTRONIC SOLID-STATE HOT WATER HEATER -- According to the manufacturer, the "Instant-Flow" hot water heater provides instantaneous hot tap-water at a 98 percent efficiency rate. Based on a new concept for hot water heaters, the unit is boilerless and requires less than one sq ft (0.09 sq m) of space for installation. Used both for remodeling and in original construction, the "Instant-Flow" eliminates the need for a separate hot-water supply line since the unit is installed at the point of use by connection to a branch line from the cold-water supply line. This solid-state product retails for \$120. Agents and, especially, stocking distributors are sought. WRITE: Don E. Icenogle, Orcal Marketing Corporation, Dept. CN, Bank of America Tower, Room 414 - The City, One City Boulevard West, Orange, California 92668 U.S.A.

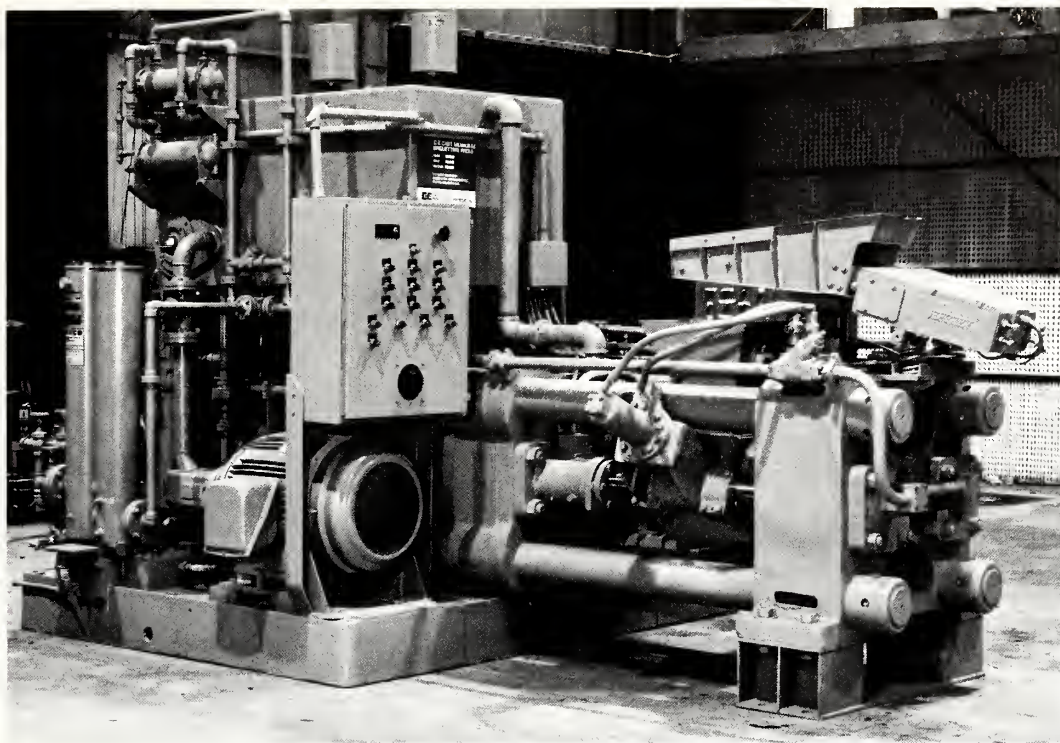


UNIT HEATS WATER WITH RECLAIMED WASTE HEAT -- "Heater Helper" provides hot water by salvaging heat from the hot refrigerant gas in the compressor of air conditioning, refrigeration, or heat pump equipment. This reclaimed heat, according to the manufacturer, can be as much as 33 percent of the rated capacity of the system and often meets all of the water-heating requirements. In other words, the conventional water heating system may never be needed except during peak periods of hot water usage. Possible areas of application include residential sites, restaurants, motels, and hospitals. "Heater Helper" is priced at \$400. The firm seeks agents and distributors. WRITE: Robert W. Kross, Air & Refrigeration Corporation, Dept. CN, P.O. Box 3427, 1915 Peters Road, Suite 109, Irving, Texas 75061 U.S.A.

LABORATORY AND SCIENTIFIC INSTRUMENTS

UNIT TESTS LOW DENSITY THERMAL INSULATION -- This firm introduces the "R-Matic," an instrument for quickly evaluating the thermal performance of very large samples of insulation materials (up to 60x60x20 cm/24x24x8 in). The unit can test a wide variety of low-density insulation materials including fiberglass and mineral fiber batts and blankets, "loose-fills," cellular plastics, etc. The "R-Matic" will operate unattended, completing its measurements in approximately 60 minutes. Accurate to within two percent and repeatable to within one percent, the product makes all measurements at a mean temperature of 24 degrees C (75 degrees F). Suggested for manufacturers of thermal insulation. The firm seeks overseas agents for this unit which sells for \$28,000. WRITE: Mr. K.G. Coumon, Dynatech R/D Company, Dept. CN, 99 Erie Street, Cambridge, Massachusetts 02139 U.S.A.

METALWORKING AND FINISHING



SYSTEM MAKES COMPACT "BRIQUETTES" FROM FERROUS, NON-FERROUS SCRAP -- This "Hot Briquetting System" is a means of compacting low-grade ferrous or non-ferrous scrap chips into charge material for cupolas and arc furnaces. Foundries, steel mills, scrap yards, and other users will be interested in this efficient way to upgrade scrap such as cast iron borings, steel turnings, brass or copper chips, shredded cans, etc. Once formed, these hard, dry briquettes can be melted in any type of furnace without cooling first. The firm says this can save up to \$7 per ton on electrical energy. The system, selling for \$1,000,000 can pay for itself in as little as one year. WRITE: A.C. Schulz, C-E Cast Equipment, Dept. CN, 7887 Hub Parkway, Cleveland, Ohio 44125 U.S.A.

PRODUCTION

(Specialized Machinery and Equipment)

ENERGY-EFFICIENT ELECTRIC BOILER -- This firm states that its "Electrode Boilers" offer 98.6 percent efficiency in changing power to steam as compared with 80 percent efficiency for units powered by fossil fuels. Steam is generated by electricity passing between electrodes in the boiler's inner pressure vessel. Since the water is the conducting medium, the conduction of electricity decreases, automatically regulating steam production,

as steam displaces the water. Flameless and fumeless, the boilers do not require chimneys and present no danger from low water levels. Available outputs: 15-1,600 kw; 15-1,000 psi; 200, 400, and 500 AC volts. Price: \$2,800-\$34,000. WRITE: Robert W. Mower, Electric Boiler Corporation of America, Dept. CN, 101 Franklin Street, Kewanee, Illinois 61443 U.S.A.

RESTAURANT, HOTEL AND CATERING EQUIPMENT

AUTOMATIC DISPENSING MACHINE FOR BEVERAGES -- The "Mr. Mixit" is a non-refrigerated beverage dispenser for liquid concentrates or non-carbonated drinks (tea, lemonade, etc.) Concentrate, still in its container, is placed in the product compartment of the dispenser and a tube from the pump is inserted into the container. The machine's pump draws the concentrate to the dispensing nozzle where it is precisely mixed with an adjustable flow of water. Pre-mixing and left-over waste are eliminated. The "Mr. Mixit" is very lightweight and compact and, because it is not refrigerated, requires very little electricity for ordinary work loads. Attractive, simple to maintain, the product sells from \$70 to \$100. Potential agents are invited to contact the firm. WRITE: Bruce R. Rudd, E.D.C. Dispensing Systems, Dept. CN, 715 North Cherry Street, Winston-Salem, North Carolina 27101 U.S.A.



FULL-TIME CONTROL SYSTEM FOR ELECTRICAL USAGE -- Designed especially for supermarkets, restaurants, hotels, and similar users, this "Energy Management System" saves energy, by coordinating and limiting all electrical loads, without affecting safe operation of refrigeration, heating, etc. Each power load (lights, heaters, etc.) has an independent, modular control which can be programmed to switch the load on and off at the correct times. Non-essential loads can be set to turn off automatically when peak current consumption is reached, or each load can be set to switch off for a few minutes in every fifteen. Seven day programs, with special settings for weekends and holidays, are also possible. Price is \$4,000. WRITE: Grant M. Brown, Engineered Supermarket Products, Inc., Dept. CN, 2190 Coffee Road, Lithonia, Georgia 30058 U.S.A.

TRADE AND TECHNICAL LITERATURE

SELECTED ENERGY PUBLICATIONS AVAILABLE THROUGH NTIS

The National Technical Information Service (NTIS) of the U.S. Department of Commerce is the central source for the public sale of Government-sponsored research, development and engineering reports and other analyses prepared by Federal agencies, their contractors or grantees, or by Special Technology Groups. NTIS also is a central source for Federally generated machine processable data files.

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The Weekly Government Abstract newsletter on Energy provides readers with timely research summaries on energy sources; energy use, supply, and demand; power and heat generation; energy conversion and storage; energy transmission; fuel conversion processes; energy policies; regulations and studies; and engines and fuels. \$75 (\$105*)

NASA Bibliography with Indexes

The National Aeronautics and Space Administration publishes quarterly Energy: A Continuing Bibliography with Indexes.

Coverage includes regional, national and international energy systems; research and development on fuels and other sources of energy; energy conversion, transport, transmission, distribution and storage with special emphasis on the use of hydrogen and of solar energy.

The NASA energy quarterly has five indexes which are cumulative through the year. They include subject, personal author, corporate source, source, contract number and report number. An annual subscription is \$40 (\$80*). Single copy \$12.50 (\$25*).

Monthly Energy Review

The Monthly Energy Review is one of the principal communications medium for the Department of Energy and its constituency. It incorporates the energy information previously published in the PIMS Monthly Petroleum Report, the supplements to PIMS and Monthly Energy Indicators.

All brochures are available for the prices indicated from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

A 25 percent discount is available on all orders of 100 or more copies of each brochure when mailed to the same address, or the brochures may be reproduced locally, if you so desire.

**Prices outside North American continent*

The Review averages about 90 pages an issue in 10 major parts with additional data elements being developed. The major parts are an Overview, summarizing events of the previous month; Energy Sources; Electric Utilities; Resource Development; Consumption, Price, and International. An annual subscription is \$50 (\$100*). Single copy \$6.25 (\$12.50*)

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WRITE: NTIS, 5285 Port Royal Road, Springfield, Va. 22161

SELECTED REPORTS AVAILABLE

Energy Conservation Handbook for Light Industries and Commercial Buildings

Aids in identifying specific steps that can be taken to improve fuel utilization in plant buildings, processes, and equipment.

Price \$.35

Energy Management Guide for Light Industry and Commerce

Prepared with the National Bureau of Standards, this document offers 70 energy conservation opportunities for managers of smaller businesses.

Price \$.70

Voluntary Business Energy Conservation Progress Reports

Issued semi-annually, this publication reports on progress made by the U.S. business community participating in the Department of Energy's Voluntary Business Energy Conservation Program.

Energy Management for Furnaces, Kilns and Ovens

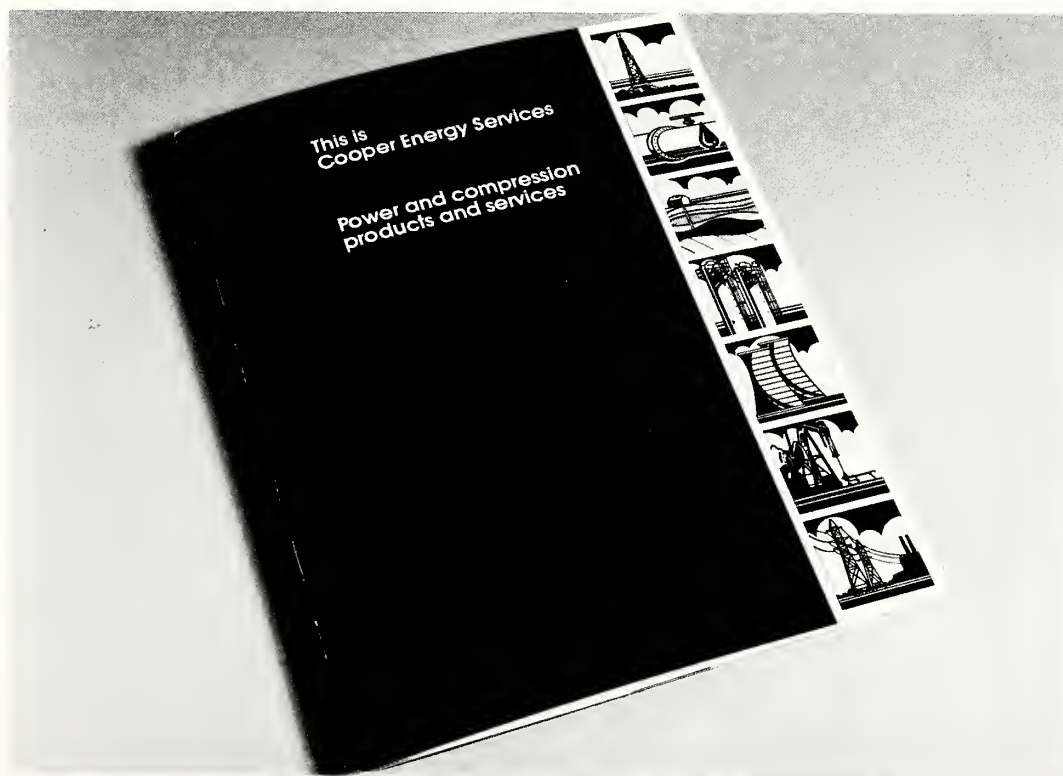
This handbook is a guide to making decisions as to just what actions are appropriate and effective for energy savings in equipment such as furnaces, kilns and ovens. Typical energy conservation opportunities in combustion control, insulation, etc., are discussed; simplified methods of calculation and measurement are given; and benefit/cost analyses and time required to recoup investment are described as a means of evaluating energy savings investments. \$1.60

**Prices outside North American continent*

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NEW SURVEY OF EMERGING SOLAR ENERGY INDUSTRY -- This is said to be the most comprehensive and up-to-date guidebook on solar energy developments and activities in the U.S. The survey reviews six major areas of solar technology: 1) heating and cooling; 2) solar thermal electricity; 3) photovoltaics; 4) wind energy; 5) ocean thermal; and 6) bioconversion. Sells for \$60. Agents are sought. WRITE: Justin A. Bereny, Solar Energy Information Services, Dept. CN, 18th 2nd Avenue, P.O. Box 204, San Mateo, California 94401 U.S.A.

NEW CATALOG LISTS PRODUCTS FOR ENERGY-RELATED INDUSTRIES -- Cooper Energy Services announces publication of a 24-page booklet detailing its array of products and services for the oil, natural gas, chemical process, and power generation industries. The new catalog lists pertinent applications and specifications for a wide variety of power and compression products (turbines, engines, compressors, plunger pumps, etc.) sold under such respected trademarks as Ajax, Cooper-Bessemer, Penn Pump, and Superior. Also included are details of services: customer services such as those designed for the installation, upkeep, and modification of the firm's products; also services of the Gas and Oil Services Company (GOSCO) which offer maintenance and overhauling for an entire production, pipeline, or processing facility. For a complimentary copy of this new publication, WRITE: Advertising Department, Cooper Energy Services, North Sandusky Street, Mt. Vernon, Ohio 43050 U.S.A.



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DEPARTMENT OF ENERGY'S (DOE) TECHNICAL INFORMATION CENTER

The DOE Technical Information Center (TIC) is the collection, processing, and distribution point for scientific and technical information generated as a result of DOE programs. One of the primary objectives of TIC is to assure that DOE-sponsored research is reported promptly and that reports are distributed within DOE and to DOE contractors. Most reports are then made available to the general public through the National Technical Information Service, Springfield, Virginia. TIC also has the responsibility for supplying the technical information needs of DOE and DOE contractors in the pursuit of the DOE mission. In pursuing this mandate, TIC locates and acquires energy-related scientific and technical information nationally and internationally through bilateral agreements with foreign countries, special exchange programs and organization-to-organization agreements. All information acquired is carefully evaluated and analyzed to determine its subject content. Those items determined to be within the subject scope of TIC's energy information data base are announced, reproduced, distributed, indexed, abstracted, and stored for machine searching, and retrieval. The following announcement journals are produced from this data base:

1. Energy Research Abstracts (ERA), a semimonthly abstracting journal announcing all DOE supported research, other U.S. government reports on energy, and foreign exchange documents.
2. Energy Abstracts for Policy Analysis (EAPA), a monthly abstracting journal announcing literature contributing to energy-related analysis and evaluation in the following areas: policy; conservation; research and development studies; economics supply and demand, forecasting; systems studies; and environment effects.
3. Fossil Energy Update (FEU), a monthly abstracting journal announcing current literature on coal, natural gas, petroleum, oil shale, hydrogen production, electric power engineering, and MHD generators.
4. Solar Energy Update (SEU), monthly abstracting journal announcing literature on solar energy.
5. Geothermal Energy Update (GEU), a quarterly abstracting journal announcing literature on geothermal energy.

Specialized bibliographies are also produced using the DOE data base. Current bibliographies are available in the following subject areas: hydrogen fuels, solar energy, cooling towers, radioactive waste processing and disposal, geothermal resources, coal processing, production, and properties, and magneto-hydrodynamics.

The TIC is responsible for supplying the U.S. nuclear information to the International Atomic Energy Agency for announcement in the nuclear abstracting journal Atomindex.

Other TIC functions include an on-line retrieval system and a centralized motion-picture film library and loan service. There is also available a translation service.

The Department of Energy's Technical Information Center Bibliography Series:

The following entries are bibliographies on technical topics from the DOE Energy Information Data Base. The volumes have computer-produced indexes. To obtain WRITE: DOE Technical Information Center, P.O. Box 62, Oak Ridge, Tennessee 37830.

Solar Energy: A Bibliography. Mar. 1976.
9732 refs. TID-3351-RLP1, Citations.
\$13.75. TID-3351-RIP2,
Indexes. \$10.75.

Geothermal Resources: Exploration and
Exploitation. July 1976. 5476 refs.
TID-3354-RL. \$16.25.

SELECTED REPORTS AVAILABLE

Energy in Focus: Basic Data. 1977. 16 pages.
Statistics on U.S. energy production, imports,
consumption, and prices that reflect energy
situations over the past quarter century.
Essential background for an understanding
of the trends that have led to the current
status of energy supplies.

Energy Technology. 1977. 6 pages. Describes the
research needed to locate, recover, develop, store,
and distribute various energy forms in a clean,
convenient, and economical way.

Flywheels: Storing Energy as Motion. 1977. 7 pages.
Spinning wheels can store energy to improve electric
car performance. Larger flywheels could store wind
energy or provide supplementary power during peak
electrical demand times.

Fuel Cells: A New Kind of Power Plant. 1976. 6 pages.
Explains how fuel cells produce electricity, and features
experimental demonstrations for utilities.

Fuels from Biomass. 1977. 4 pages. How biomass (vegetation,
animal wastes, etc.) can be processed to produce methane gas
or fuel oil.

Solar Electricity from Photovoltaic Conversion. 1977. 8 pages.
Tells how solar cells, composed of silicon and similar materials
are used to generate electricity directly from the sun's rays.

Solar Energy. 1976. 45 pages. Basic information about the use of
solar energy to provide electrical power and the developments in
technology that will be needed to use it more effectively for the
benefit of mankind.

* *

COMPLETE OR PARTIAL COLLECTIONS OF DOE REPORTS IN COUNTRIES OTHER THAN THE UNITED STATES

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Community (Euratom)
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de Energia Nuclear
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of Canada, Ltd.
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Otaniemi, Teknillinen Korkeakoulu

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d'Etudes Nucléaires de Saclay

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17TH CENTURY SOLAR ACTIVITY: A CLUE TO FUTURE CLIMATE CHANGES?

A dramatic and puzzling lag in solar activity during the late 17th Century may hold an important clue to understanding and predicting changes in Earth's climate.

Dr. Stephen Suess, a researcher for Commerce's National Oceanic and Atmospheric Administration, says that the "solar wind"--a stream of energetic atomic particles continuously emitted by the sun -- slowed to a comparative breeze for about 70 years between 1645 and 1715, and may therefore be linked with the occurrence on Earth of the "Little Ice Age" which reached its peak at about the same time.

During those years, the sun's normal 11-year sunspot cycle seems to have disappeared. Records show that the few sunspots which did occur were small and short-lived. Simultaneously, displays of the aurora on Earth (events closely associated with sunspot activity) faded dramatically, all but disappearing from the skies in temperate latitudes. In addition, the solar corona, the halo of glowing gases which becomes visible around the sun during eclipses, was evidently smaller and duller than it is today. This long period of solar quiet is known as the Maunder Minimum, after the English astronomer who first postulated it.

During this period, Earth was suffering through the coldest part of the Little Ice Age, a time of long, severe winters which extended from about 1450 to 1850. Suess is one of a growing number of scientists who believe this was no coincidence.

Evidence is accumulating that solar activity produces marked effects on Earth's weather. Since the solar wind is an obvious intermediary between the sun and our planet, information on how it affected our weather during the Maunder Minimum may help us to predict future climatic conditions.

After studying a variety of evidence, including data gathered by Dr. John Eddy of the National Center for Atmospheric Research, Suess has concluded that the solar wind was comparatively weak and slow during the Maunder Minimum. The unusual changes which 17th Century records note in the appearance of the sun and in the occurrence of auroras indicate a long period of low-velocity solar wind and a faint corona with a weak magnetic field. The wind would also have been essentially featureless: a homogeneous flow moving outward with equal force in all directions.

These points are of more than historical interest. As Suess explains: "The sun can no longer be thought of as a non-varying star on time scales even as short as decades. It is not unlikely that even over the coming fifty years there will be significant changes in average properties of the solar wind. Observing and understanding these changes will make it possible to anticipate (them) and gain the benefits of better preparation for their consequences."



A LARGE WIND TURBINE GENERATOR